

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

CURRENT CASH MANAGEMENT EFFORTS WITHIN
THE FEDERAL GOVERNMENT, DEPARTMENT OF DEFENSE
AND THE NAVY: OVERVIEW AND APPLICATIONS

by

Henry James Sanford
June 1979

Thesis Advisor:

Edwin A. Fincke

Approved for public release; distribution unlimited

T 189142

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Current Cash Management Efforts Within the Federal Government, Department of Defense, and the Navy: Overview and Applications		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis: June 1979
7. AUTHOR(s) Henry James Sanford		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Naval Postgraduate School Monterey, California 93940		12. REPORT DATE June 1979
		13. NUMBER OF PAGES 95 pages
		15. SECURITY CLASS. (of this report) Unclassified
		16a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) cash management, funds management		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Among other economies, the Federal Government and its component can save millions of dollars annually in interest costs by implementing sound cash management principles. Cash management is simply getting the most out of the time value of money and the process of arranging finances to minimize the money borrowed and the interest paid for it. The Federal Government's cash management program stresses three principles: (1) collecting money when it is due and depositing collections promptly; (2) paying bills and making		

disbursements when due, neither earlier nor later; and (3) minimizing idle cash balances. Within the Department of Defense and the Navy there is room for improvement in all three principles, but especially with regard to minimizing cash balances. Improvements in this area can be made by providing additional guidance to disbursing officers in computing cash requirements, retention of summary data from which cash forecasts can be made, education of money managers in the cash management field, and the further study of Economic Order Quantity (EOQ) models involving the management of cash.

Approved for public release; distribution unlimited

CURRENT CASH MANAGEMENT EFFORTS WITHIN
THE FEDERAL GOVERNMENT, DEPARTMENT OF DEFENSE,
AND THE NAVY: OVERVIEW AND APPLICATIONS

by

Henry James Sanford
Lieutenant, United States Navy
B.B.A., Saint Bonaventure University, 1973

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
June 1979

ABSTRACT

Among other economies, the Federal Government and its components can save millions of dollars annually in interest costs by implementing sound cash management principles. Cash management is simply getting the most out of the time value of money and the process of arranging finances to minimize the money borrowed and the interest paid for it. The Federal Government's cash management program stresses three principles: (1) collecting money when it is due and depositing collections promptly; (2) paying bills and making disbursements when due, neither earlier nor later; and (3) minimizing idle cash balances. Within the Department of Defense and the Navy there is room for improvement in all three principles, but especially with regard to minimizing cash balances. Improvements in this area can be made by providing additional guidance to disbursing officers in computing cash requirements, retention of summary data from which cash forecasts can be made, education of money managers in the cash management field, and the further study of Economic Order Quantity (EOQ) models involving the management of cash.

TABLE OF CONTENTS

I.	INTRODUCTION-----	7
II.	CASH MANAGEMENT-----	9
	A. NATURE OF MONEY-----	9
	B. WHAT IS CASH MANAGEMENT?-----	11
	C. EFFECTIVE CASH MANAGEMENT SYSTEMS-----	16
	1. Forecasting-----	16
	2. Inflow Control-----	18
	3. Utilization-----	22
	4. Outflow Control-----	23
	5. Relations with Financial Institutions-----	24
	6. Cash Management Attitude-----	26
III.	FEDERAL GOVERNMENT'S CASH MANAGEMENT PROGRAM-----	28
	A. PRESIDENT'S REORGANIZATION PROJECT-----	28
	B. NATURE OF THE FEDERAL GOVERNMENT'S CASH FLOW-----	29
	C. FEDERAL CASH MANAGEMENT PROJECT OBJECTIVES-----	30
	1. Accelerating the Inflow of Receipts-----	32
	2. Streamlining Receipt Processing-----	32
	3. Selecting and Compensating Financial Institutions-----	32
	4. Controlling Disbursements More Closely-----	33
	5. Eliminating Excessive Idle Cash Balances-----	33
	6. Establishing Policies, Authorities, And Responsibilities-----	33
	7. Develop Incentives to Make Federal Managers Better Cash Managers-----	33

IV.	CASH MANAGEMENT WITHIN DOD AND THE NAVY-----	34
A.	BACKGROUND-----	34
B.	RESULTS OF THE DEFENSE DEPARTMENT'S REVIEW GROUP-	35
1.	Billings, Collections and Deposits-----	35
2.	Disbursements-----	37
3.	Cash Advances-----	39
4.	Cash Held Outside Treasury-----	40
5.	Other Ideas Developed by the Review Group----	41
C.	SUMMARY-----	42
V.	CASH HELD OUTSIDE THE TREASURY IN DEPARTMENT OF THE NAVY-----	43
A.	ECONOMIC ORDER QUANTITY (EOQ) -----	44
B.	GENERAL ACCOUNTING OFFICE'S CASH MANAGEMENT AUDIT-	46
C.	THE DISBURSING OFFICER OFFICER AFLOAT-----	48
1.	Cash Requirements and Flow-----	49
D.	ADDITIONAL REGULATIONS-----	53
E.	FORECASTING-----	57
F.	SUMMARY-----	60
VI.	CONCLUSIONS AND RECOMMENDATIONS-----	64
A.	CASH MANAGEMENT EDUCATION-----	66
B.	FURTHER STUDY IN THE APPLICATION OF INVENTORY CONTROL THEORY TO OPTIMIZE CASH BALANCES-----	66
C.	RETENTION OF DISBURSING RECORDS-----	67
	APPENDIX A - Economic Order Quantity Models Involving Cash-	69
	APPENDIX B - Chapter 8000 - <u>Cash Management</u> , Treasury Fiscal Requirements Manual-----	76
	BIBLIOGRAPHY-----	92
	INITIAL DISTRIBUTION LIST-----	95

I. INTRODUCTION

The Federal Government's "Maltese Falcon" has been discovered. "The Maltese Falcon," movie and mystery story fans will recall, was a gold statue of a bird, encrusted with precious gems. To disguise its value, the bird was painted with black enamel. Passed on for centuries, few owners guessed its true value and none were perceptive enough to scratch its surface to uncover the treasure underneath.

Like the title object in Dashiell Hammett's classic mystery tale, the value of effective cash management has been discovered by the Federal Government. The concept of cash management is nothing new to the private sector; for years the time-value of money has been recognized as an important factor in the decision making process. A concentrated, all encompassing effort in cash management for the Federal Government, however, is a recent phenomenon.

Why is sound cash management in the Federal Government so important now? The answer is that money is simply more expensive than it was ten or twenty years ago. When short-term money costs less than one percent to borrow and long term funds cost two or three percent, there is much less concern for cash management. However, when the Government borrows long-term funds at $9\frac{1}{2}$ percent or greater, it becomes obvious that sound cash management is a concept whose time has arrived.

President Carter, in November of 1977, directed his re-organization project staff to conduct a comprehensive review of the Federal Government's cash management policies, practices and organization. The cash management project is aimed at improving ways in which agencies and departments manage their cash. It involves such measures as collecting money quickly when due, paying bills on time, and putting money on hand to effective use.

The goal of the Federal program is to save money by reducing interest costs incurred by the Treasury in financing a portion of \$500 billion annual cash flow. More than \$175 million in savings annually is expected during the first year (1979).

This thesis examines the cash management efforts undertaken by the Government and focuses particular attention on the development of cash management within the Department of Defense and the Navy. Further, the work examines the problem of reducing idle cash balances aboard U.S. Navy ships.

The scope of the thesis then, ranges from a general discussion of cash management principles to an analysis of a specific problem related to the Navy. The subject, as it pertains to the Federal Government, is rather soft. That is, specific data are difficult to acquire because the effort is still in its infancy. Consequently, proposed solutions or remedies contained within this work are conceptual in nature.

II. CASH MANAGEMENT

A. NATURE OF MONEY

John M. Keynes stated that there are three motives for holding money: the transactions motive, the precautionary motive, and the speculative motive. The transactions motive relates to "holding cash to bridge the interval between the receipt of income and its disbursement or between the time of incurring business costs and that of the receipt of the sale proceeds." The precautionary motive involves holding cash to provide "for contingencies requiring sudden expenditure and for unforeseen opportunities of advantage purchases." The speculative motive involves holding cash in order to secure "profit from knowing better than the market what the future will bring forth." Keynes believed the transactions motive and the precautionary motive to be essentially functions of the level of income (i.e., the money value of the transactions) and the speculative motive to be a function of interest rate [Ref. 20, p. 204].

As a major consequence of Keynes' discussion, transaction flows and interest rates won acceptance as crucial variables underlying the desire to hold cash [Ref. 25, p. 6]. The economics profession initially showed a tendency to attach an excessively pictorial interpretation to Keynes' discussion; in fact, for a time the view of three separate cash balances, one for each motive, seemed to be firmly entrenched. This

three balance notion has diminished recently and it is now widely recognized that every unit of cash on hand stands ready to meet a variety of circumstances; transactive, precautionary, or speculative.

Cash is one of many assets held by an individual household or firm. Each asset yields a stream of value or services, and individuals seek to apportion their total wealth in such a way that the expected utility of the stream from assets held is maximized [Ref. 25, p. 8]. Milton Friedman, without attaching the same importance to all of Keynes' motives, offers a view of money that emphasizes the same basis in maximization of a utility stream [Ref. 25, p. 208].

As a result of Friedman's work, the widely accepted current view holds that money may create utility as a financial asset and as a productive asset. As a financial asset, the value of cash responds to changes in interest rates and the general level of prices. As a productive asset the role of cash in the income-creation process is direct. Cash, then, derives its value in part as a financial asset through imperfectly foreseen changes in the price level and return rate on other assets. Its value as a productive asset stems from the way it eases the burden of transactions [Ref. 25, pp. 6, 7].

Neither view of cash--as a financial instrument or a productive unit--is adequate by itself. A proper combination of cash, financial claims, and physical assets must be found, even if cash is held only because of the convenient services that it yields.

Finally, cash is the perfect bearer of options and its major source of value is what it can buy. Cash can take on three functions; a medium of exchange, a store of value, and a standard of deferred payments. As a medium of exchange, cash is an intermediary for which goods are sold and with which purchases are made. As a store of value, cash provides options as to time and place, and goods and/or services for which it is to be spent. As a standard of deferred payment, cash permits the holder to make credit arrangements and future contracts that are repayable in terms of general purchasing power rather than specific items which may or may not be available when the contract is due [Ref. 26, p. 6].

B. WHAT IS CASH MANAGEMENT?

Very simply stated, good cash management is getting the most out of the time value of money. As anyone who has ever paid or received interest knows, having a dollar today is worth more than having a dollar in the future. Cash management is the process of arranging finances to make the most of the use of the money held and to minimize the money borrowed and the interest paid for it [Ref. 27, p. 1].

Why is it important to manage cash? The reason is quite basic. Money has a value over time, and organizations (as well as individuals) are willing to pay for its use in the form of interest. Thus, idle cash balances incur a cost, either directly in that idle funds could be used to reduce debt, and, therefore, reduce interest costs, or as an

opportunity cost of interest foregone by not investing or not lending. For private corporations, the investment markets in the United States are sophisticated to the point where money can be profitably invested for periods as short as one day.

History is replete with examples of both good and bad cash management in private and public sectors of the economy. The failure to provide for adequate cash resources to meet liabilities as they become due has been one of the more common causes of business failures.

Although the concept of cash management is not new to the business world, important changes in the conduct of business since World War II have had a marked influence on its development. First, the extension of corporations into the multi-divisional or "profit center" structures has multiplied problems of controlling and funding corporate operations. Improvements of communications and transportation have facilitated innovations for the faster movement and clearing of funds [Ref. 15, p. 8].

Perhaps the most fundamental change that has occurred in the economy since World War II was the Employment Act of 1946, which has had a significant impact on the availability and cost of money. The twin objectives of the bill (reduced unemployment and a high standard of living with a minimal amount of inflation) have produced strong consumer and social demand for goods and services that business and government have been hard pressed to satisfy, even while utilizing all available credit.

Since World War II the increased demands for credit have been reflected in the rising cost of money. Formerly increasing costs of money have generally reduced the demand for it when growth and speculation became excessive; however, in recent years, cost has been less significant than the availability of funds in controlling the demand for money [Ref. 15, p. 18].

U.S. economic policy has developed such that sound cash management is inherently necessary. Because fiscal policy has resulted in successive deficit federal budgets in the last two years, monetary policy has been left to control the rate of inflation. Historically, this "mopping up" has been accomplished, more or less, by throttling m_1 (currency and demand deposits) and m_2 (savings accounts). Recently however, the value of m_1 is less useful in determining the general price level. The combination of current higher interest rates, extraordinary speed of communications, and the worldwide convertability of currencies has provided alternatives to m_1 . These alternatives include liquid asset funds, Eurodollars, and NOW accounts all of which are essentially money.

Without some basic change in the economic structure, corporate and government financial officers must learn to live with expensive and limited supplies of money in a highly stimulated economy. Under these conditions, the role of the financial officer is destined to become more important in determining policy and direction.

The benefits from effective cash management correspond directly to the size and complexity of the cash flow being

managed. In large scale organizations with decentralized units that receive and disburse money, the cumulative effect of consolidating many small gains can have a substantial overall benefit. For example, the Federal Government's cash flow is the largest and most complex in the world with receipts and disbursement streams that each approximate \$500 billion annually, as well as substantial short term debt refinancing.¹ The daily interest cost of each billion dollars the Federal Government borrows at current rates exceeds \$150,000 [Ref. 27, p. 2].

With the rising cost of money in the last three decades, many companies and indeed the Federal Government have let their cash balances lay dormant. There are at least three reasons for this [Ref. 29, p. 72]:

1. Accounting procedures usually understate the size of the cash balance. A substantial portion of cash available seldom appears as cash on a company's balance sheet. The two principal sources of this hidden cash are: (a) receipts by an agency of the company that have not reached a bank (cash-in-transit), and (b) cash in a bank on which checks have been drawn but not charged to the company's account (float). These items understate the true amount of money to be managed.

¹\$500 billion represents the net amount of receipt and disbursement streams. Actually, when the velocity of money (the rate at which a unit of money is passed from hand to hand in a given year) is taken into consideration, the amount is several times larger.

2. Evaluation procedures of the financial functions hinder imaginative cash management. Frequently, the treasurer or other financial officer most able to improve cash management processes is evaluated by his ability to produce funds on short call and to obtain the prime rate on commercial bank loans. Obviously, both these functions are important to the financial health of the company. However, the first measurement encourages money managers to maintain excessively large reserve balances or excessive standby lines of credit which require sizable compensating balances with commercial banks. As for the second measurement--the rate at which money can be borrowed--it is usually calculated at the simple interest rate, hiding the true cost of borrowing when compensating balances are required by the lending bank, as they usually are.

3. Corporate management has not come to grips with the substance of its cash gathering and disbursing processes. Frequently in the past, top management had shied away from examining the company's cash processes because of their assumed complexity. This job was left to the bank officers and accountants--none of whom have more than a fraction of the total picture.

Basically, the process of managing funds within the organization entails thorough fact gathering and analysis. Improvement opportunities fall within the domain of every level of management--not just the comptroller or treasurer. Effective cash management, therefore, requires the concerted attention of personnel whose top management sponsorship and direction gives them authority to cross organizational lines.

C. EFFECTIVE CASH MANAGEMENT SYSTEMS

An effective cash management system impacts an organization on two levels. First, at the operating level in those functions that process receipt and disbursement documents, procedures and practices should be in force that optimize the effective use of funds for the organization. Second, at the decision making level--particularly in contract negotiations, capital budgeting decisions and organizational decisions that affect the nature of receipt and collection processing--the time value of money should be included explicitly as a cost factor in the decision process [Ref. 27, p. A-2].

The essential ingredients of an effective cash management system are as follows:

1. Forecasting
2. Inflow control
3. Utilization
4. Outflow control
5. Relations with financial institutions
6. Cash management attitude

An examination of the factors listed above is provided in the following sections.

1. Forecasting

The main objective of cash management is a supportive one; to provide for the adequate availability and safekeeping of funds under varied economic conditions in order to help achieve organizational objectives. In order to achieve the

objective--the economical use of available cash--it is necessary to devise a plan to measure the funds required to run the organization. Such a plan is a cash forecast.

Cash forecasts are generally categorized as being short-term or long-term. Short-term forecasts are used for three main purposes: (1) to determine operating cash requirements; (2) to anticipate the need for short-term financing; and (3) to manage the investment of surplus [Ref. 11, p. 61].

The length of the forecast depends upon the nature of the business in which the organization is engaged. Generally, organizations whose operations are subject to wide fluctuations are more likely to use short forecasts, while more stable operations will tend to employ longer forecasts. Specifically, short-term forecast periods vary from one week to two years.

There are two methods of short-term forecasts commonly used: (1) the cash receipts and disbursements method; and (2) the adjusted net income method [Ref. 15, p. 12]. The cash receipts and disbursements method attempts to project the cash items received or disbursed, including operational and non-operational transactions. These include items that arise from the projected purchase or sale of capital assets, and items that indicate increases or decreases in creditor or equity investment. This method is favored by those who must exercise close control over cash.

The adjusted net income method (source and application of funds) projects changes in the balance sheet, particularly working capital items. The estimated profit is adjusted for changes in working capital items that affect cash, such as

receivables and inventory, and for nonoperating changes such as capital expenditures. A further adjustment is made for all noncash items such as depreciation.

Each forecasting method has properties that make it better than others for certain specific purposes. The cash receipts and disbursement method is more helpful in the day-to-day control of cash, while the adjusted net income tends to produce a better picture of the working capital needs of the organization. If both methods are used together, they can balance and supplement each other. The adjusted net income method obviously has a limited application in the public sector [Refs. 15 and 11, pp. 13 and 1].

Unlike short-term forecasts, which are detailed estimates, long-term cash forecasts usually only try to judicate the effect of proposed long-range plans such as acquisitions, new product development, and long-range growth on the organization balance sheet. Such forecasts are particularly useful in arranging long-term borrowing.

The methods used in long-term forecasting are the same as those used in short-term forecasting, although the adjusted net income approach is preferred because it more accurately reflects the effect on cash of changes in company size and nature of operation [Ref. 15, p. 22].

2. Inflow Control

The reduction of the time necessary for collecting receivables (inflow control) is an area that has great potential for providing additional usable cash. The process begins

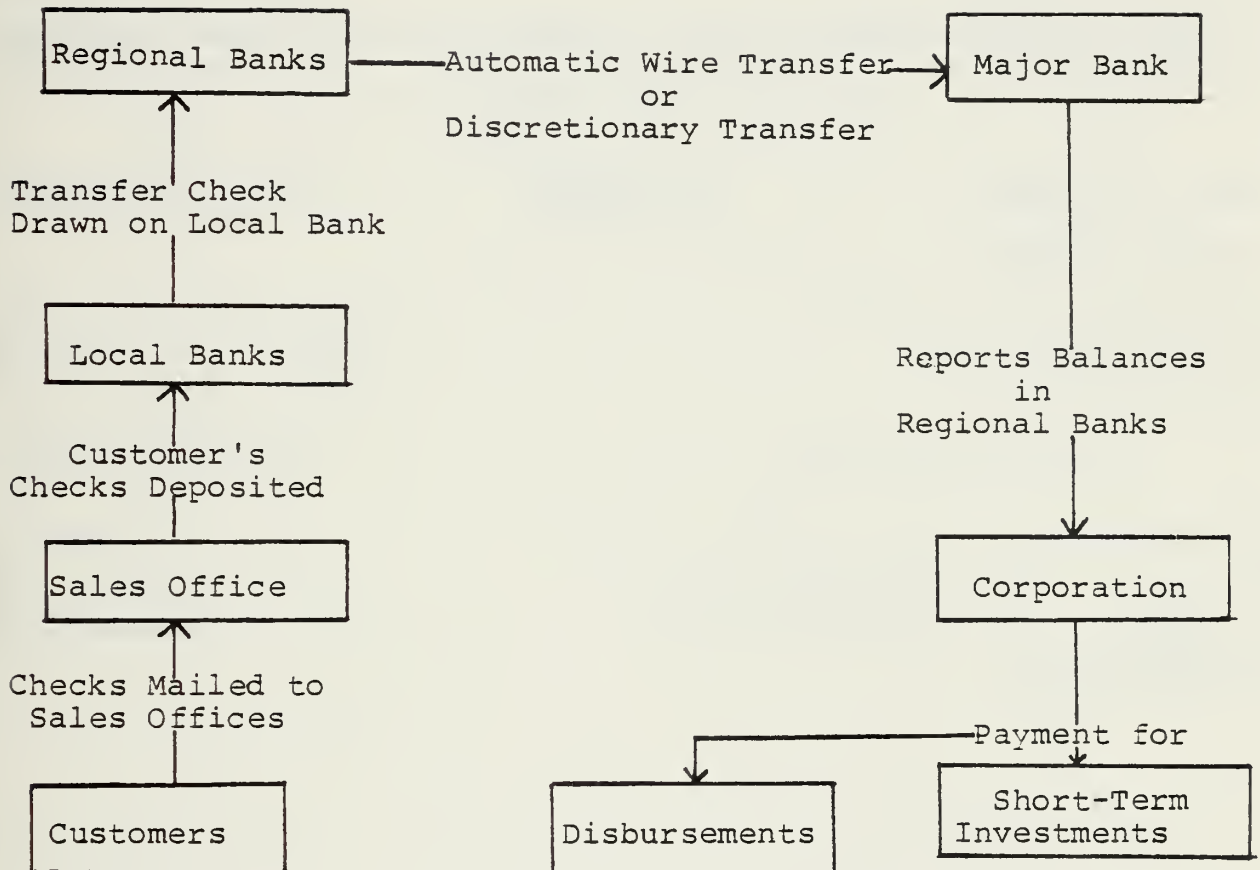
with specifying terms of payments as most favorable to the recipient--recognizing that there may be trade-offs between price and payment terms--and continues through the conversion of a payment received into usable funds.

Besides specifying the terms of payment there are two banking arrangements which can be utilized to assist inflow control; area concentration banking and a lockbox system. The objective of either approach is to reduce the mail delivery and required time to convert the payment to "collected" funds available for use.

Area concentration banking is most useful in improving the collections of corporations with a large number of field offices throughout the country that collect a large number of small payments. The flow of funds is illustrated in Exhibit 1. The area concentration system provides that the local offices receive and deposit checks in banks in their local areas. The funds are moved from the local banks to regional or area banks by wire (electronic funds transfer) or transfer check. The daily reports of collected funds received by the corporation's major bank from the regional banks are reported to the financial officer, who can draw off excess funds from the system and have money available for investment or disbursement as needed.

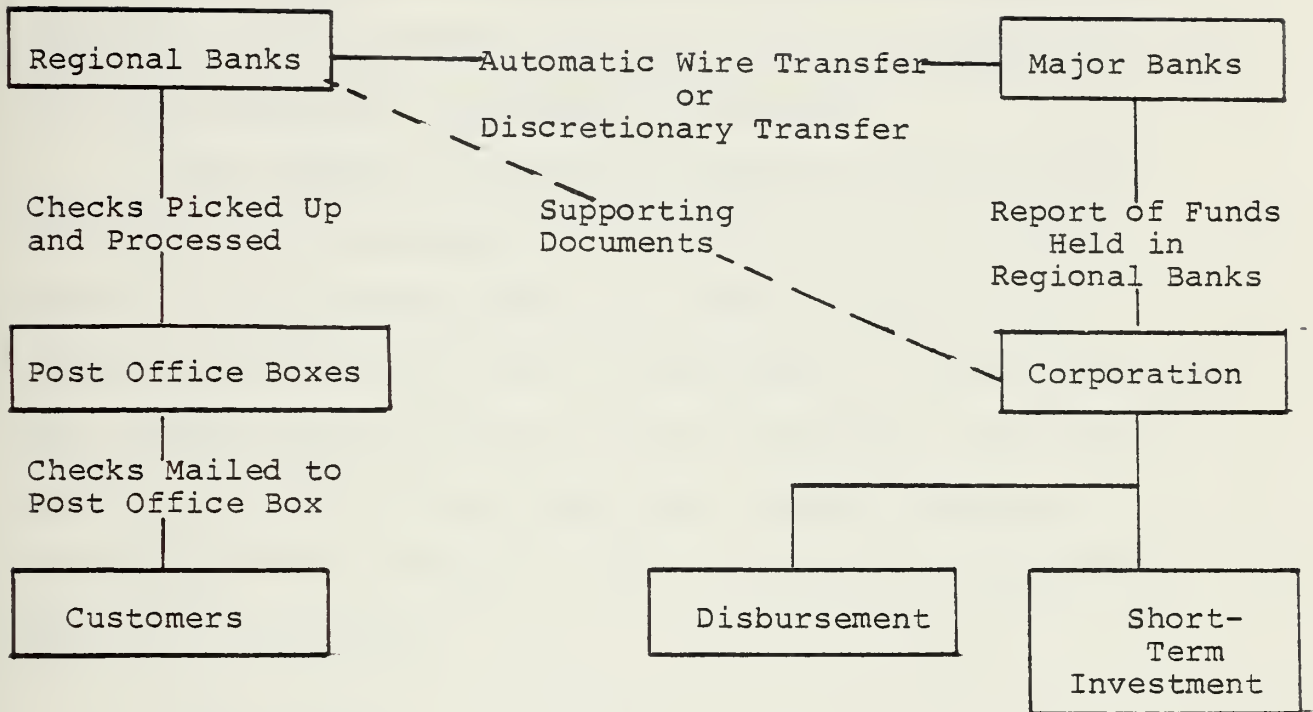
The second method to speed-up collections is a lockbox system. This is a system of depository accounts geographically located so that payments mailed by customers will take no more than one day to reach that location. The flow of funds is illustrated in Exhibit 2. The lockbox is a post office box

EXHIBIT 1
AREA CONCENTRATION BANKING



Source: Ref. 15.

EXHIBIT 2
THE LOCKBOX SYSTEM



Source: Ref. 15.

designated as the remittance address for customers of the corporation. The corporation then authorizes its bank to have access to this post office box, allowing the bank to collect the checks, and forward the supporting documentation received with the checks to the corporation's credit and accounts receivable department for posting.

The lockbox is of value primarily to corporations whose accounts receivables are centralized and in which there is a sufficient number of checks of large dollar amounts to warrant the cost of processing. The advantage of the lockbox system is that collected funds are available at least one to three days sooner than ordinary corporate processing where checks are sent to corporate headquarters [Ref. 15, pp. 29-30].

3. Utilization

Effective utilization of funds means that all money is held in the form and location that the corporation desires. This may mean holding cash as compensating balances in banks, holding investment securities or holding strategic liquidity reserves.

In the development of policy for the investment of surplus funds, the intended use of those funds is as important as the corporate return-on-investment philosophy. If the invested funds are to be used as a return of cash into inventory, or as a cushion against a sudden unexpected drain of cash, a highly marketable, minimum risk investment should be considered. If the funds are extended for a specific payment

at some time in the future, as a dividend or tax payment, a security maturing on that date may be purchased with less concern for marketability. Finally, if there are excess funds over and above seasonal or specific purposes, they may be invested in securities with longer maturities [Ref. 15, p. 42].

The following are some of the common money market instruments available for investment:

- a. Treasury Bills
- b. State and Municipal Securities
- c. Bank Certificates of Deposits
- d. Time Deposits
- e. Bankers Acceptance
- f. Finance Paper
- g. Industrial Paper
- h. Foreign Securities
- i. Repurchase Agreements

The financial officer has a number of alternatives from which to choose in determining the company's portfolio mix. The critical aspect is that the funds are held in the form and location that the corporation desires.

4. Outflow Control

As with inflow, outflow control begins with terms of payment, but it continues through the time that the funds are charged to the payer's account at the bank. The essence of control is to pay the obligation when the organization wants it paid.

Cash can be conserved by employing a payables system that centralizes the payment of large bills as far as it is practicable to do so. A centralized payables system facilitates control over the timing of disbursements.

Discounts should always be taken when offered, and they should be processed in such a way that they are paid as late in the discount period as possible, but always before the discount expires.

Drafts are devices which give the organization added flexibility. A draft differs from a check in that it is not held to be a claim against corporate funds until it is presented to the bank for payment. Once the draft is presented, the corporation may or may not honor it; if it does, it may take one business day to raise the funds. When checks are issued, the corporation has, in effect, made payment when the vendor receives them, and the funds must be available when the checks clear. The main reason for the use of drafts is to maintain stricter control over the collected balance in the bank account without being overdrawn [Ref. 15, p. 32].

Maximizing the "float" (cash items in process of collection) is another method of outflow control. One way to do this is to pay bills that are due on the West Coast with checks drawn on East Coast banks and vice versa.

5. Relations with Financial Institutions

The importance of bank relations in cash management depends to a large extent on the number of banks an organization uses and the types of banking services it requires.

However, all organization financial officers are concerned with the same basic problems: the most advantageous assignment of accounts, the compensation of banks for their services, the control of balances, and the appraisal of banks for the services they render [Ref. 11, p. 98].

Organizations, except the very largest, generally prefer to keep their central accounts in one or two banks. Very large corporations often require the services of several major banks either in their headquarters city or money market centers.

There are other factors that sometimes result in the use of several central banks even though one or two would suffice. One of these factors is the size organization in relation to its community. When a firm is the biggest in town, its management might feel obligated to spread their banking business over all the principal local banks.

Banks are compensated for services either by means of compensating balances or by payment of service charges. The most common practice is to use the compensating balance, that is, an average daily balance in an account, the earnings on which are sufficient to defray the cost of the bank's services in handling the account and permit the bank to make a reasonable profit.

Compensating balances are favored by most companies for the following reasons [Ref. 11, p. 99]:

- a. Compensating balances facilitate establishment of lines or credit.

- b. Substantial bank balances encourage banks to render special services.

c. Substantial bank balances help build good community relations.

Many companies customarily appraise their banking services and costs relative to balances maintained, and control their balances accordingly. The methodology for making such appraisals is often informal, except for very large companies. Informal reviews consist of casual examinations of services and costs of other banks. Reviews may be prompted by a shortage of cash or a desire to reduce balances. Regular formal reviews, made by large companies, are usually based on company-set standards for banking costs and profits, and have a dual purpose; (1) to ensure that balances are not excessive; and (2) to ensure banks are adequately compensated [Ref. 11, p. 101].

6. Cash Management Attitude

While not generally identified in literature on cash management, the organization's attitude concerning cash is an important ingredient in a successful cash management system. Perhaps the most difficult task of a cash management function is to achieve a level of understanding among all managers that the time value of money is a consideration to be included in all relevant decision making processes.

The cash management attitude of an organization is shaped largely by three interrelated factors:

- a. Degrees of Uncertainty
- b. Risk Aversion
- c. Rates of Growth

The environment in which the organization operates and the personality of top management determines the uncertainty of future operations, the degree to which future risk will be accounted for, and what fund requirements exist to support planned rate of growth.

III. FEDERAL GOVERNMENT'S CASH MANAGEMENT PROGRAM

A. PRESIDENT'S REORGANIZATION PROJECT

President Carter, on November 14, 1977, directed his re-organization staff, in conjunction with the Treasury Department, to conduct a comprehensive review of the Federal Government's cash management policies, practices, and organization [Ref. 27, p. 1].

One of the early results of this effort was the publication on March 31, 1978 of a new cash management chapter in the Treasury Fiscal Requirements Manual (TFRM), a publication which dictates financial regulations to all government agencies. The new chapter addresses all aspects of cash management as it affects the installation level and is presented in its entirety as **Appendix 2**. The chapter provides the guidelines for use in establishing effective cash management practices for government organizations in order to maximize cash balances available to the Treasury for investment and to avoid unnecessary borrowing to finance federal programs. Specifically, Chapter 8000 prescribes procedures to assure effective cash management when developing regulations, systems, and conducting financial activities encompassing billing and collections, deposits, disbursements, cash advances, and cash held outside of the Treasury.

B. NATURE OF THE FEDERAL GOVERNMENT CASH FLOW

The Federal cash flow is massive and highly complex. In Fiscal Year 1977, aggregate receipts exceeded \$448 billion and were derived from a variety of taxes collected by the Treasury and a wide range of activities carried out by other governmental departments. Cash outlays approximated \$493 billion in Fiscal Year 1977. This represents the amount of cash flowing from the Treasury into the private sector [Ref. 27, p. II-1].

Aside from the approximately \$384 billion of gross tax receipts for Fiscal Year 1977, there were more than forty sources of nontax receipts that exceeded \$100 million each during that same time period. The gross nontax receipts (including sources less than \$100 million each) were in excess of \$55 billion and were derived from a wide variety of sources that included loan repayments, sales of resources, leases of federal properties, royalties, fines, commissary sales, and sales of services. The remittances for these collections flow from the public to other departments and agencies where they are processed for subsequent deposit into the Treasury account.

The complexity of the outflow area of Federal cash flow is even greater than that of inflow. Given the number of Federal organizations and the different types of disbursements that encompass the \$493 billion of Fiscal Year 1977 outlays, there are literally hundreds of organizational/source outlets through which Federal cash flows. For example, seven departments and agencies each contract for more than \$1 billion of goods and

and services each year, and another seven departments and agencies let grants each in excess of \$100 million annually [Ref. 27, p. II-2].

The complexity is further compounded by the uneven nature of both the inflow (receipts) and outflow (outlays). The tax receipts peak on the calendar quarter and around April 15 while many of the nontax receipts, by their nature, are remitted in large sums rather sporadically during the year. This magnifies the problem of forecasting and often provides peak workload conditions that can hinder timely receipt and processing.

C. FEDERAL CASH MANAGEMENT PROJECT OBJECTIVES

The primary goal of the federal cash management project is to save the Federal Government money through the implementation of sound cash management practices [Ref. 20, p. I-2]. Before the objectives designed to achieve this goal are discussed, it is important to examine some of the factors that contribute to the Federal Government's cash management problem.

First, in many program agencies (for example, the Department of Defense) there is little incentive for managers to manage cash flow well. Program managers, in general, receive no rewards or penalties as a consequence of the way they influence cash flow. With a few exceptions, the agencies and departments other than the Treasury Department experience no cost or benefit related to the time value of money. This lack of incentive

often leads to a low priority for developing and installing modern cash management systems.

Second, as a consequence of less than full concern about the time value of money, agencies and departments may not develop accurate cash flow forecasts. As discussed in Chapter II, the heart of any effective cash management system is accurate cash flow forecasting.

Third, the primary focus of governmental budgeting at every level is on the obligation of funds. Congress grants obligational authority to departments and agencies and thus there is a natural mental set towards focusing on obligations and not cash outflow. Operating budgets granted to organizational units within a particular department are a means of issuing obligational authority. For many government projects, the commitment to spend money is far removed in time from the actual expenditure. Thus, while program managers may be quite effective in accurate obligation planning, they are not asked to provide cash budgets that reflect expenditure and receipt patterns.

Finally, the Federal Government accounting and control systems that relate to cash flows have as their focus the accountability of funds to the exclusion of the rate of flow. Thus, the data generated by the systems do not provide an ability to properly monitor or audit cash management practices [Ref. 27, p. II-7].

Clearly, these are not insurmountable obstacles to achieving effective cash management throughout the Federal

Government. The objectives designed to eliminate the problem discussed above are examined in the following sections [Ref. 27, p. II-3].

1. Accelerating the Inflow of Receipts.

There are opportunities for the Federal Government to collect some of the money that is due in a more business-like manner. Collecting money more frequently and sending out bills in a timely manner are two opportunities for improvement. There are sophisticated methods of receiving funds through electronic funds transfer (EFT) that can be applied to managing the federal cash flow.

2. Streamlining Receipt Processing

Accelerating the cash inflow to the government is only a valid objective when the government promptly receives and processes it. At times, either the uneven flow of receipts, administrative bottle-necks or inattention to the time value of money unnecessarily delays the processing of receipts. Identification of such receipt bottlenecks and streamlining receipt processing through work simplification are important steps in attaining the stated goal.

3. Selecting and Compensating Financial Institutions

Banks and other financial institutions play an essential role in cash management operations. Identification of which banking services the Government should use and how the banks are compensated in a fair and economical way are key objectives in the project.

4. Controlling Disbursements More Closely

The Government should pay its bills on time--not before or after they are due. Opportunities to use and refine the letter of credit concept are ways in which disbursements can be controlled. Letters of credit are credit instruments which are used to eliminate the float in check transactions. For example, the government can arrange with the Federal Reserve Bank to open a letter of credit in favor of a particular contractor. This document states that the bank will honor--or accept--drafts drawn on the Government, provided they are drawn in accordance with detailed terms stated in the letter of credit.

5. Eliminating Excessive Idle Cash Balances

While any organization needs some operating cash for day to day needs, the amount should be kept to a minimum.

6. Establishing Policies, Authorities, and Responsibilities To Ensure Institutional Cash Management Excellence

7. Develop Incentives to Make Federal Managers Better Cash Managers

The overall scope of the Federal cash management effort includes all money transactions of the Government including trust funds, loan programs, and revolving stock funds. While the scope is wide, the focus has been and continues to be to concentrate on the most massive elements of the cash flow and those areas where there are substantial opportunities for improvement. One such area falls within the purview of the Department of Defense and the Navy.

IV. CASH MANAGEMENT WITHIN DOD AND THE NAVY

A. BACKGROUND

The Federal Government, Department of Defense, and the Navy have had regulations which are consistent with cash management principles. The General Accounting Office (GAO) has demonstrated an awareness and an interest in improving cash management techniques. However, the implementation of a consolidated overall government policy is quite recent.

As discussed in Chapter III, one of the early results of the President's Reorganization Project was the publication of a new cash management chapter in the Treasury Fiscal Requirements Manual (TERM) on 31 March 1978. Navy and DOD components participated in a review of the new requirements prior to their publication. Shortly after the publication of the TERM chapter, the President's Reorganization Project (PRP) approached the Defense Department as part of a series of joint PRP/Agency cash management reviews. The purpose of these reviews was to identify initiatives in cash management improvements. DOD then established a review group in order to identify these initiatives and to report back to the PRP. All components within DOD were represented on the review group.

B. RESULTS OF THE DEFENSE DEPARTMENT'S REVIEW GROUP

The remainder of this chapter is devoted to the examination of the review group's findings [Ref. 23]. There are essentially five cash management groupings that warrant discussion. Specifically, these groups are:

1. Billings, Collections and Deposits
2. Disbursements
3. Cash Advances
4. Cash Held Outside Treasury
5. Other Ideas Developed by the Review Group

A detailed discussion of these principal groups is provided in the following sections.

1. Billings, Collections and Deposits

Cash receipts, such as commissary store sales, are frequently collected by various activities other than the installation Accounting and Finance Office (A&FO). When such receipts are required to be submitted to the A&FO for deposit by that office, a minimum of an additional day or two is added to the administrative processing time before the collection is credited to the Treasury's cash account. In order to alleviate this problem DOD components have authorized commissary stores to make deposits directly to the disbursing officer's account, rather than delivering the funds to the disbursing office.

Foreign Military Sales (FMS) represent a significant cash input to the Treasury. Previous procedures had two of the three cash collection points located away from Federal

Reserve banks. Since 1978, FMS collections have been centralized in Denver, Colorado, where a Federal Reserve Bank is located. This permits cash to be deposited directly and more expeditiously to the Treasury's account [Ref. 23, p. A-1].

In conjunction with centralizing the collection point, some foreign countries are being encouraged to use electronic funds transfer in paying for their FMS purchases. Foreign countries are also required to pay 90 days in advance of delivery of goods and services authorized by law for foreign military sales.

With regard to billing procedures, DOD components (since October 1978) are required to prepare and dispatch invoices within one working day after the billing office is advised that the goods have been shipped or released or the services have been completed. Additionally, a late payment charge at the rate of $3/4$ of 1% for each 30-day period or portion thereof is stipulated in all contracts, agreements, or other formal payment agreements.

It is estimated that the centralization of collections and deposits for foreign military sales results in an interest savings to the Treasury of approximately \$3 million annually. (Benefits from other actions have not been quantified.) The savings assume a 7% interest factor, the elimination of the average three-day delay in the collection and deposit process, and an in-transit amount of \$5 billion [Ref. 23, p. A-3]. Since the deposit requirements in the new Treasury Fiscal Requirements Manual do not differ significantly from those existing, realization of benefits from other actions will be

primarily dependent on increased efforts to ensure compliance. Nevertheless, accelerating the inflow of receipts into the cash account of the Treasury will serve to reduce Treasury interest costs.

2. Disbursements

Until the early part of 1979, there was no attempt to delay payments until their due dates. In the past (and to some extent, presently), as soon as all documentation was received to validate the propriety of payment, the disbursing officer made the payment. Bill paying systems worked on a first-in, first-out basis, with the commonly accepted practice being to pay the bill as quickly as possible. No current, reliable Navy-wide statistics are available, but a General Accounting Office survey of the whole government reveals that seventy percent of bills are paid early or on time [Ref. 10].

Under new procedures, DOD components' systems will provide for scheduling the issuance and mailing of checks for receipt by the payee as close as administratively possible to the due date. If no due date is specified on the invoice, the payment will be made thirty days after receipt of the invoice.

The bill paying situation is complicated by the fact that most of the largest contracts have clauses which are in conflict with the general thirty-day rule and, as a result, have a negative impact on sound cash management practices. The following types of contracts contain mandatory clauses which dictate the timing of payments (citations are from the Defense Acquisition Regulations):

<u>Contract</u>	<u>Section</u>
Fixed Price Supply	7-103.7
Cost Reimbursement Type Supply	7-203.4
Facilities Acquisitions	7-203.9

For example, a cost reimbursement type supply contract has the following payment clause:

...(b) Payments shall be made to the contractor when requested as work progresses, but not more frequently than bi-weekly...
(c) Promptly after receipt of each invoice or voucher and statement of cost, the government shall,...make payment thereon....

There are other types of contracts which have special payment clauses included in them. The impact of the contracts mentioned above on cash management practices is that these contracts require payment prior to 30 days after the receipt of the invoice, thereby accelerating cash outflow. Additionally, all incoming invoices must be classified as to the type of contract under which they are submitted.

The final provision of the disbursements section of the TRFM is the mandatory taking of discounts that offer terms of one percent ten days, net thirty or terms better than this.² It has been the Navy's policy for many years to take advantage of discounts and thus this provision should be easily accommodated.

In summary, the paying office--prior to scheduling payment--must identify the following variables [Ref. 31, pp. 42-46]:

²This notation means that a discount of 1% is allowed if payment is made within 10 days of invoicing, and payment regardless of discount is expected within 30 days.

- a. Due date on invoice or procurement document.
- b. Date of receipt and acceptance of goods and services.
- c. Type of contract.
- d. The presence or absence of an adequate discount.

Fortunately, in the case of the Navy, the new bill paying system is featured as part of the Integrated Disbursing and Accounting (IDA) concept. IDA essentially consolidates and regionalizes the financial transactions previously performed by Regional Finance Centers and Authorized Accounting Activities. Many bills are being paid under the IDA system already, and it will replace the older system by 1982 [Ref. 32, pp. 50-55].

The variables identified above will be incorporated into an automated cash management program which will queue the invoice in accordance with given criteria. As of this writing, the cash management program for IDA has not been completed.

To date, the savings derived from the implementation of the disbursement section of the TRFM have not been specifically determined. However, it is anticipated that this new procedure will reduce U.S. Treasury borrowing, as well as provide vendors with the incentive to offer cash discounts that are economically advantageous to the Government [Ref. 23, p. A-4].

3. Cash Advances

In the case of a contract which authorizes advance payments, the Government assumes responsibility for the

initial funding of the contractor's allowable expenses. To offset the adverse impact on cash management inherent in such an arrangement, commercial contractors are charged compensating interest on such advances. Despite these interest charges, the Defense Acquisition Regulation (DAR) categorizes advance payments as the least preferred mode of contract financing, and requires high level approval of all such arrangements [Ref. 23, p. B-2].

Treasury regulations require that payment be made as close as possible to the time the contractor incurs the cost and that the agency collect from the contractor all interest earned on the advances.³ The Navy does not make wide use of the particular contract method; the advance payment method is confined primarily to a relatively small number of research and development contracts with educational institutions. As a result of the small number of DOD/Navy contracts involved with the method of financing, there are no new savings anticipated.

4. Cash Held Outside Treasury

Disbursing officers must request authority to hold cash at personal risk. Requests are approved only for amounts required for day-to-day incidental cash disbursements. DOD components are required to review cash balances at least once a quarter and assure that balances are commensurate with current operating needs.

³See Appendix B, Section 8050.30.

While existing DOD component regulations are claimed to be sufficient in providing guidance concerning the computation of cash holdings, the GAO does not seem to agree. A more detailed discussion of this point will be made in Chapter V. At this point it is sufficient to say that intensive reviews made by the Air Force and Army have resulted in reductions of cash balances by approximately \$10 million [Ref. 23, p. B-5].

Continuing efforts in this are still in progress. Among the most important improvements is the program to encourage the direct deposit to financial organizations of service member's pay. This effort will assist in reducing DOD components mid-month and end-of-month cash requirements.⁴

5. Other Ideas Developed by the Review Group

a. Payment Standards. As stated in Section B.2 of this chapter, different types of procurement contracts contain clauses which specify payment due dates. Other contracts, however, do not specify payment due dates. The Department of Defense is currently studying the payment terms now contained in the Defense Acquisition Regulation. The study will consider the advisability of changing some of these clauses to be consistent with sound cash management and in the best interests of the Government. The study is expected to be completed by November 30, 1979 [Ref. 23, Tab A].

⁴Example of sub-optimization. While direct deposit of service member's pay reduces DOD's cash requirements, it tends to minimize the float on Treasury checks and is, therefore, inconsistent with sound outflow control procedures.

b. Oil Purchases. Currently, the Defense Acquisition Regulation does not permit consideration of the time value of money when evaluating competitive bids for oil contracts. Most suppliers quote a standard price and allow a discount for payment before the due date. Both the price and the discount are considered in determining the bid to be selected. However, no consideration is given to extended due dates in bids even though such bids may be less costly because of the time value of money. Action on this matter is expected during Fiscal Year 1979 pending approval by the Defense Acquisition Regulatory Council [Ref. 23, Tab 10].

C. SUMMARY

While the Department of Defense and the Navy are committed to improve their cash management in any way possible, the policy regarding timing of payments is viewed as the most significant problem arising from the study of TRFM regulations and of the other subjects addressed by the review group. The Office of the Secretary of Defense (OSD) has tasked the services with a quarterly report of the status of planned actions in the cash management field. These planned actions include improvements in outlay forecasting, reduction of balances held in depository accounts, and other efforts mentioned in this chapter.

V. CASH HELD OUTSIDE THE TREASURY IN DEPARTMENT OF THE NAVY

Within the Navy the most significant and immediate of the cash management initiatives dealing with cash held outside the Treasury concerns the reduction of cash balances held by disbursing officers. Although the Navy is in compliance with the Treasury's rules, there is latitude in the interpretation of those rules. In order to reduce the amount of cash held by disbursing officers, more specific guidance in this area is required.

In 1977 the Navy was accountable for approximately \$53.9 million in cash of which \$39.7 million, or seventy-three percent, was attributed to shipboard cash requirements. Responsibility for the largest share of the Navy's cash held outside the Treasury then, rests with disbursing officers aboard ships.

The problem of excessive cash balances aboard Navy ships will be discussed further in this chapter. The intent is to present the problem by examining what is being done in the way of additional guidance for the afloat disbursing officer and to explore possible remedies.

This chapter will present a brief explanation of Economic Order Quantity (EOQ) theory as it pertains to cash management. (A more detailed discussion on cash EOQ models is provided in Appendix A.) This will be followed by an overview of the General Accounting Office Audit which identified cash held

outside of Treasury as a problem in the Navy. The final sections of this chapter examine the environment in which the disbursing officers aboard ships operate.

A. ECONOMIC ORDER QUANTITY (EOQ)

The management of cash is very similar to the management of inventory. Some of the same tools and techniques used in inventory control can be applied to this problem. There are two fundamental questions that must be answered in controlling the inventory of any physical good: (1) when to replenish the inventory; and (2) how much to order for replenishment. The analysis of these two questions is best presented graphically, as shown in Figure V-i.

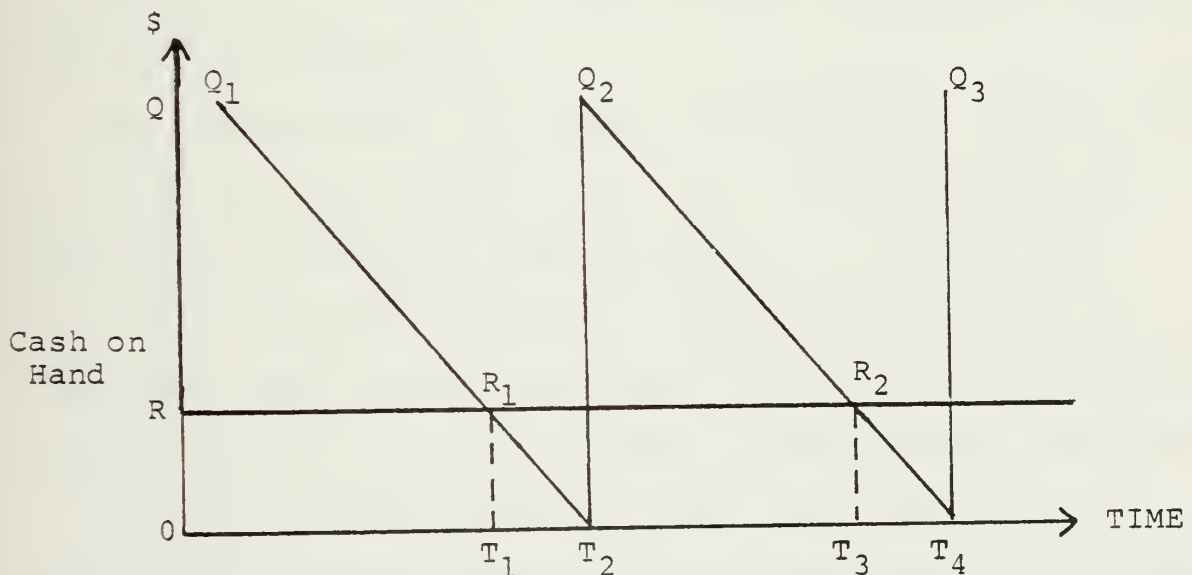


Fig. V-i

where:

R = reorder point
Q = optimum order quantity of \$
T = time

As the amount of cash decreases from Q , along line $Q_1 R_1$ and reaches the reorder level R , Q amount of cash is ordered. The amount of time to replenish the cash is represented by the interval $T_2 - T_1$. If the time to replenish cash is known with certainty, and the rate of decreasing cash balance, represented by line $R_1 T_2$, is known with certainty, then cash on hand should reach zero as the new cash arrives. This brings cash on hand back up to point Q_2 and the cycle then repeats itself.

The objective is to minimize cash on hand, subject to the constraint that sufficient cash must always be on hand to satisfy demand. Minimizing cash inventory can be accomplished by increasing the availability of cash from the suppliers. That is, increase the number of replenishments which will reduce the amount of cash ordered, Q .

The problems with this simple analysis are: (1) the demand for cash (the slope of the line, $Q_1 R_1$) during a particular period must be known or predicted; and (2) the lead time ($T_2 - T_1$) required to replenish the cash must be known or predicted. Additionally, the costs involved with replenishment cash and carrying cash on hand must be measured and evaluated.⁵

For the disbursing officer ashore, the prediction of replenishment lead time and demand can be determined with reasonable accuracy. However, his counterpart afloat is not as fortunate. Changes in ship operating schedules reduce the certainty of

⁵A detailed description of these costs can be found in Appendix A.

predicting opportunities for cash replenishment and the demand for cash. There is a solution--stochastic processes used in inventory control when demand is uncertain can be applied when replenishment lead time is uncertain as well.

Further discussion of replenishment lead time stochastics is beyond the scope of this work. The intent of the discussion is to compare the management of cash to the inventory management of any physical good and suggest its appropriateness to the Navy's (as well as other agencies) cash management efforts. Additional study and data collection would be required before a definitive statement of applicability can be given.

B. GENERAL ACCOUNTING OFFICE'S CASH MANAGEMENT AUDIT

In March 1978 the United States General Accounting Office reported the results of an audit of Department of Defense activities' cash management procedures [Ref. 12]. Excess cash balances of approximately \$50 million were found at DOD central finance offices overseas, at military service finance and accounting offices, and aboard ships. As a result of these excesses the Treasury incurs about \$3.2 million of unnecessary interest costs annually. The reason for the excessive cash balances, the GAO found, was a lack of, or non-specific guidelines for computing cash requirements.

The GAO report's scope covered the Department of Defense as a whole and identified specific problem areas. One such area was the role of cash aboard Navy ships. Cash balances of fourteen ships were analyzed in 1976 and 1977. The majority

of ships were, at the time of the audit, in regular overhaul or extended shipyard availability periods. Excessive cash balances were found on thirteen ships. Records indicated that excesses ranged from \$892,000 during deployments to \$353,000 while in port.

As of June 30, 1977, the Navy was accountable for approximately (including aboard ships) \$53.9 million. Afloat cash requirements as of the same date were \$39.4 million. Using the prevailing treasury borrowing rate of marketable obligations in September 1977 of 6.5 percent, the annual interest on \$39.4 would be \$2.6 million. While perhaps insignificant when compared to the total U.S. debt, interest costs saved by minimizing cash balances is a step toward effective cash management.

The criteria used to determine cash requirements for a particular ship were subjective and generally derived as a consensus of opinion between the auditor and the disbursing officer. The Navy Comptroller Manual (Vol. 4) and Intermediate Commander's Regulations were also utilized [Ref. 17].

In all cases, the auditors found that there was no consistency between ships in interpreting the prescribed guidelines. Specifically, one of three fleet commands and only one of the ten type commands had any instructions concerning cash requirements and availability of cash replenishment points overseas.

In the auditor's opinion, the single most important reason for the excesses was a lack of historical documents from which accurate cash forecasts could be made. Cash books and other

records are maintained on board for 90 days after relief of disbursing officers and then are sent to Federal Record Centers for review and storage. In many cases, the disbursing officer had been recently commissioned in the Navy and had little or no experience in making forecasts.

Excess cash was at times justified by citing the requirement to get the ship underway unexpectedly, thereby not having adequate time to replenish the ship's cash supply. This rationale was based upon the interpretation by the disbursing officer of the operational readiness posture of the ship.

C. THE DISBURSING OFFICER AFLOAT

Disbursing officers aboard U.S. Naval vessels are designated to perform the duties relating to the disbursement of and accountability for public funds. These officers are required to keep safely without lending, using, depositing in banks, or exchanging for other funds except as allowed by law, all the public money collected by them. Public money in this case being cash.

The Navy Comptroller Manual specifically states: "Except as otherwise authorized by law and by regulations, it will be the duty of every disbursing officer having public money in his possession not required for current expenditure to deposit the same with one of the depositories of the United States, without delay,...." [Ref. 24, Para. 041300]. That rather general regulation presents a problem for the disbursing officer afloat, especially when the ship is deployed. Where

can be deposit money? How much cash is required for current expenditures? The latitude given the disbursing officer in answering the second question is really the crux of the cash management problem afloat.

1. Cash Requirements and Flow

The disbursing officer, with the approval of the ship's commanding officer, is authorized to hold cash funds at personal risk. These cash funds are:

- a. U.S. Currency and Coin
- b. Foreign Currency and Coin
- c. Cash on Deposit in a Designated Depository
- d. Cash in the Hands of Deputies and Agent Cashiers

It is interesting to note that because of Treasury regulations, cash held for meeting periodic payrolls is excluded from the amount of cash which a disbursing officer must obtain permission to hold at personal risk. The cash required to meet periodic paydays while deployed often represents the overwhelming majority of cash held by disbursing officers.

The guidance available to the disbursing officer in determining his cash requirements is contained in Navy Comptroller Manual, Vol. 4, paras. 042300-042301. The criteria utilized for determining limitations are structured according to the geographic location of sources of cash. These criteria are:

- a. Source of Funds Close

When the source of funds is reasonably close to the disbursing office, and when no more than 24 hours' notice is required to obtain them, cash may be authorized for:

(1) Two weeks' requirements when the amount is less than \$10,000;

(2) One week's requirement when the amount is \$10,000 or over, but less than \$100,000;

(3) Three days' requirements when the amount is \$100,000 or over.

b. Source of Funds Not Reasonably Close

When the source of funds is not reasonably close to the disbursing office or if more than 24 hours' notice is required to obtain them, cash may be authorized for:

(1) One month's requirement when amount is less than \$10,000;

(2) Two weeks' requirement when the amount is \$10,000 or over, but less than \$100,000;

(3) One week's requirement when the amount is \$100,000 or over.

c. Source of Funds Remote

When the source of funds is remote, cash may be authorized for:

(1) One month's requirement when the amount is less than \$200,000;

(2) One weeks' requirements when the amount is \$200,000 or over.

The computation of cash-on-hand requirements presently is made by calculating the average cash disbursements made during the last six months, adding amounts that will be necessary to meet specific requirements within the limitation

period. Consideration has to be given to the degree of security available and the potential for a hazardous incident arising from the transportation of funds. Consideration also has to be given to:

- a. Prospective cash collections from postal money orders and retail outlets.
- b. Dependability of cash availability at ports of call.
- c. Practicability of obtaining cash by registered mail.

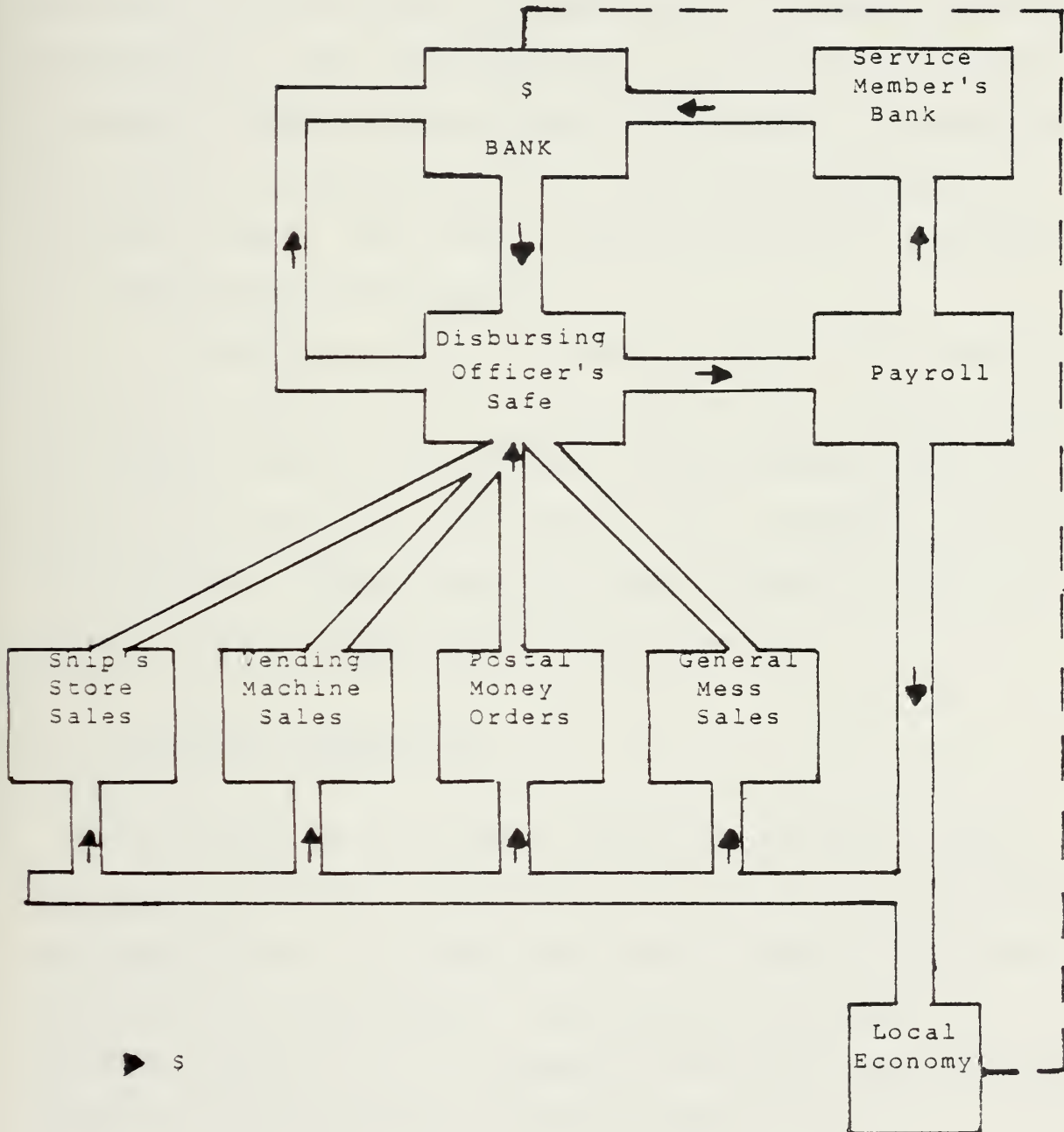
The disbursing officer's cash computation then can be represented by the following model:

$$\begin{aligned} \text{Cash computation} = f & \left[\begin{aligned} & (\text{average 6 months} \\ & \text{usage}), \\ & (\text{specific requirements}), \\ & (\text{security considerations}), \\ & (\text{collections}), \\ & (\text{cash availability at ports} \\ & \text{of call}), \\ & (\text{practicability of using} \\ & \text{registered mail}) \end{aligned} \right] \end{aligned}$$

Cash funds are generally obtained by transfer from a disbursing officer being relieved. After the initial transfer the primary source of cash funds is from exchange-for-cash checks. This situation would normally be encountered when a large amount of cash is drawn prior to a ship's deployment.

A typical ship's cash system is depicted in Exhibit 3. The cash system afloat is an open system in which cash is received, disbursed, recovered through sales, and deposited into Treasury accounts. The system is dynamic, changing with variables that can be estimated.

EXHIBIT 3
SHIPBOARD CASH SYSTEM



While the regulations described above appear to be specific in the identification of six factors to be utilized in the cash computation, there is latitude in the interpretation of these factors. Specifically, each factor has to be measured and quantified by the individual disbursing officer. Additionally, there is little or no incentive for disbursing officers to reduce cash holdings in the short run other than the threat of excessive balances being discovered during periodic audits. Even then, "excessive balance" is subject to interpretation by auditors.

Conversely, there is a strong incentive for the disbursing officer not to run low on cash. This incentive being the adverse effect upon the crew's morale precipitated by a lack of cash for pay, check cashing, etc.. Further, the threat of an adverse fitness report provides a strong incentive to ensure the ship's cash supply is "adequate."

D. ADDITIONAL REGULATIONS

As a result of the General Accounting Officer's Report and the President's Reorganization Project for Cash Management, the Comptroller of the Navy has issued a number of documents addressing cash management. Particularly noteworthy is NAVCOMPT Notice 7000 of 6 December 1978 which emphasizes three effective cash management principles [Ref. 9]:

1. Collecting money as quickly as it is due and depositing these collections promptly.

2. Paying bills and making other disbursements when due, neither earlier nor later.

3. Minimizing idle cash balances held by disbursing officers.

In order to further direct the efforts involved with minimizing excessive cash balances held by afloat disbursing officers, the Comptroller requested the fleet commanders to address the subject and provide additional guidance to disbursing officers.

Planned revisions to NAVCOMPT Manual, Vol. 4, were presented as follows:

1. When in port, ships would follow the same guidelines applicable to shore activities. If ships are subject to deployment on short notice, disbursing officers would be permitted to increase cash holdings in order to conduct one additional regular payday.

2. When deployed, ships would carry sufficient cash to conduct business prior to reaching a port where cash could be replenished.

3. Payroll cash will be defined as cash needed to conduct regular crew paydays.

4. Disbursing officers will be required to annotate their Statements of Accountability with a statement of the authorized holdings. Thus, the amount authorized and the amount on hand will be on the same form and can be easily compared.

The fleet commanders were requested to review their regulations as to cash requirements on deployments and as to the availability of funds at foreign ports of call. The GAO

Report indicated that these regulations were deficient. More specifically, the commanders were charged with: (1) updating listing of overseas cash replenishing points and sources of foreign currency and (2) establishing tables displaying total cash requirements for deployed vessels.

As of May 1979, the Commander in Chief Atlantic Fleet (CINCLANTFLT) has responded to the Comptroller's request [Ref. 6]. CINCLANTFLT concurred in the intent of NAVCOMPT and GAO to ensure excess cash is minimized and offered comments keyed to specific sections of NAVCOMPT's letter. Of importance is the insistence of CINCLANTFLT that its current directives to disbursing officers are adequate, and present guidelines provided in NAVCOMPT Manual 042300-042301 are adequate to perform cash requirement determinations.

Specifically, CINCLANTFLT's comments were:

...Existing regulations are considered adequate. COMNAVAIRLANT and COMSUBLANT major units are essentially homogeneous with respect to cash management operations and consider reference (B) (NAVCOMPT Manual Paras. 042300-042301) provides sufficient guidance to maintain cash controls. COMNAVSURFLANT, because of a more varied mix of ships, has promulgated specific guidance in Reference (C) (COMNAVSURFLANT INST 4400.1A). [Ref. 6]

Continuing, CINCLANTFLT stated:

...Listings of available cash sources for ships deployed to the Mediterranean are contained in Reference (D) (COMSERVFOR SIXTHFLT INST 4000.1b). In addition, Reference (D) directs that ships are expected to deploy with sufficient currency in all denominations to last throughout the entire deployment. CINCLANTFLT considers this guidance to be realistic and necessary in view of the problems associated with delivery of currency to the Mediterranean area.... [Ref. 6]

The difference of opinion between CINCLANTFLT and the Comptroller of the Navy has yet to be resolved. The problem is not a matter of interpretation of NAVCOMPT Manual Paras. 042300-042301, but rather utilization of guidelines in a manner consistent with sound cash management principles.

The most expedient solution to the Navy's cash held outside the Treasury problem would be to remove cash from ships by eliminating cash paydays and other cash transactions. Perhaps a script or charge account system could be implemented thereby retaining the services tendered by cash, but eliminating the costs involved with holding idle balances (e.g., interest). Implementing new systems such as the ones mentioned above, however, have associated costs. Quantifiable by study (which in turn would involve a cost to the Government), these costs would be compared to the interest savings realized by the reduction of cash aboard ships. Even if the cost-benefit ratio is favorable, an important factor remains unquantified--convenience.

The convenient services cash yields is a legitimate reason for holding cash. In Chapter II, the role of cash was discussed as being a financial asset, responding to changes in interest rates and the general level of prices, and as a productive asset, easing the burden of transactions. The second aspect of cash applies here because cash elimination aboard ship may increase the burden of transactions, thereby adversely affecting crew morale. The costs of "convenient services" include the cost of holding cash and are ones that should be recognized

as being legitimate and proper in operating the Navy. The expedient solution, therefore, is not always the wisest. Cost minimization, mindful of crew morale, should be the goal in this case, not cost elimination.

E. FORECASTING

The heart of an effective cash management system is accurate cash forecasting. In order to achieve the objective of using cash in the most economical manner, a plan must be developed to measure the funds required to run the organization. The tools to make such a plan are available to the disbursing officer; the problem is recognizing that a forecast is necessary and then utilizing data already collected in preparing the forecast.

The "tools" available for preparing cash forecasts are used on a regular basis by all Navy disbursing officers.

They are:

1. Cashbook
2. Balance Sheet
3. Statement of Accountability

The cashbook is a daily record of all transactions involving public funds and forms the basis for the preparation of financial returns. Each receipt entry in the cashbook must describe the source of the receipt, the type of receipt, whether the receipt increases the cash on hand or is an "other asset" item, and the total of the receipt. Likewise, each expenditure transaction must be described as to purpose,

type, whether in the form of cash or check, and a total of cash or other asset expenditure.

The balancing of the cashbook occurs on the last day of every month. A permanent record is maintained of each balancing by use of NAVCOMPT Form 379 (Exhibit 4). This balance sheet summarizes collections (e.g., ship store receipts, sale of meals, etc.) and disbursements (e.g., payrolls).

The statement of accountability exhibits summary totals of all receipts and expenditures of public funds occurring during the accounting period and the status of the disbursing officer's accounts at the close of that period (Exhibit 5). This statement constitutes a formal accounting to the United States for public funds and hence is a legal document. Disbursing officers' statements of accountability are submitted to Fleet Accounting and Disbursing Centers on a monthly basis.

From the above it follows that cash forecasting for the disbursing officer is not so much a matter of data collection (data are already collected by regulation), but rather utilization of the data to develop a forecast.

The preceding observation sounds simple enough; there is a problem, however. The disbursing officer afloat will normally develop a cash forecast in preparation for a ship's deployment. That is when a forecast is most critical; a period when the ship is away from homeport for extended periods and the disbursing officer cannot operate like his counterpart ashore. The problem is the records maintained for similar past deployments may not be readily available for his use.

If a disbursing officer has made a deployment during his current tour, the records are available. If he relieved his predecessor recently or after the ship's last deployment, the records are not readily available. When a disbursing officer is relieved by another disbursing officer, the retained disbursing records remain with the relieving officer for 90 days. At the end of the 90 day period the records are then forwarded to a Federal Record Center. Thus, the disbursing officer frequently has no records from which to develop a cash requirements forecast.

This problem of data availability is easily solved by retention of balance sheets (NAVCOMPT Form 379) and statements of accountability for a period of three years after the ship's deployment. In this way a summary of cash collections and disbursements would be available to the disbursing officer from which a cash forecast can be prepared. The file of these records will be small (each report is comprised of one sheet of paper) and stored easily. The cashbooks would be forwarded to record centers in accordance with present regulations. While cashbooks are useful in preparing forecasts, much of the information contained within is too detailed. Only summary data are necessary. With summary data from past deployments, the disbursing officer can evaluate (perhaps graphically, or otherwise) the relationship between collections and cash disbursements. Further sophistication of the analysis could be accomplished by distinguishing at-sea and in-port periods during the deployment and evaluating the effect upon disbursements and collections. The point is, a conscientious effort

must be made by the disbursing officer to prepare a cash forecast.

The recognition of the need for an accurate cash forecast is a problem that can be alleviated by education. The disbursing officer afloat is generally a recently commissioned officer, recently graduated from the Naval Supply Corps School, who has had little or no exposure to cash management practices. While the curriculum at supply school teaches the officer the mechanics of handling cash (making appropriate entries, balancing procedures, etc.) the principles of sound cash management are not covered. This fact was discovered during a review of the curriculum outline for Supply Corps School--Basic Qualification--Assistant Services Course (A-8B-0035). Education of the Navy's money managers in the cash management arena is extremely critical if the reduction of idle cash balances is to be realized. This educational process should begin at the source school for those managers and should carry through to the Practical Controllership Course offered at the Naval Postgraduate School, Monterey, California.

F. SUMMARY

The application of cash management principles to the idle cash problem ranges from the mundane chore of retaining summary data from which accurate forecasts can be made, to the education of money managers in the precepts of cash management. These concepts cover a broad spectrum of the Navy's organization and require continuous interaction between shore activities,

fleet units as well as headquarter commands in order to be effective.

EXHIBIT 4

BALANCE SHEET
NAVCOMPT FORM 379 (REV. 12-65) S/N 0104-LF-700-6903

DISBURSING OFFICE

DATE

SUBJECT

BEGINNING BALANCE \$

CHECKS ISSUED \$

COLLECTIONS		BROUGHT FORWARD	DAILY TOTAL	MONTH TO DATE	
VARIOUS		\$	\$	\$	
C & SS					
COMMISSARY STORES					
SALE OF MEALS					
CSROP	.01				
	.02				
ELIF	.01				
	.02				
FEHB	.01				
	.02				
FICA AND INCOME TAX					
SAVINGS DEPOSITS					
NIF					
TOTAL					

DAILY TOTAL COLLECTIONS \$

TOTAL INCREASE IN ACCOUNTABILITY \$

GROSS DISBURSEMENTS		BROUGHT FORWARD	DAILY TOTAL	MONTH TO DATE	
MILITARY ROLLS					
CIVILIAN ROLLS (General)					
CIVILIAN ROLLS (NIF)					
PUBLIC VOUCHERS (General)					
PUBLIC VOUCHERS (NIF)					
TOTAL					

DAILY TOTAL DISBURSEMENTS \$

CONFIRMED DEPOSITS \$

TOTAL DECREASES IN ACCOUNTABILITY \$

ACCOUNTABILITY END OF PERIOD \$

CASH (Actual count)	\$	
OTHER ASSETS (Actual count)	\$	
UNCONFIRMED DEPOSITS	\$	
AGENT CASHIERS		
IMPREST FUND CASHIERS		
DEFERRED VOUCHERED ITEMS		
		\$

TOTAL ASSETS \$

EXHIBIT 5

STATEMENT OF ACCOUNTABILITY

Standard Form No. 1219
5-6-60 (Rev. 1-27-59)

NAME OF DISBURSING OFFICER		LOCATION OF DISBURSING OFFICER (Mailing address)
NAME OF AGENCY		
PERIOD OF ACCOUNT	FROM	OFFICE NUMBER (Show main check symbol number)
		THROUGH

SECTION I.—GENERAL STATEMENT OF ACCOUNT

PART A.—TRANSACTIONS DURING PERIOD AFFECTING ACCOUNTABILITY

1.0	TOTAL ACCOUNTABILITY BEGINNING OF PERIOD		\$
2.0	INCREASES IN ACCOUNTABILITY		
2.1	CHECKS ISSUED ON TREASURER, U.S.	\$	
2.2	COLLECTIONS		
2.3	OTHER TRANSACTIONS		
2.9	TOTAL INCREASES IN ACCOUNTABILITY		
3.0	SUBTOTAL		\$
4.0	DECREASES IN ACCOUNTABILITY		
4.1	GROSS DISBURSEMENTS	\$	
4.2	CONFIRMED DEPOSITS WITH TREASURER, U.S.		
4.2.1	CONFIRMED DEPOSITS TO CHECKING ACCOUNT WITH TREASURER, U.S. (Funded checking accounts only)		
4.2.2	CONFIRMED DEPOSITS WITH TREASURER, U.S., OF UNAVAILABLE RECEIPTS (Funded checking accounts only)		
4.3	OTHER TRANSACTIONS		
4.9	TOTAL DECREASES IN ACCOUNTABILITY		\$
5.0	TOTAL ACCOUNTABILITY CLOSE OF PERIOD		\$

PART B.—ANALYSIS OF INCUMBENT OFFICER'S ACCOUNTABILITY

CASH ON DEPOSIT IN DESIGNATED DEPOSITORY		\$	
6.1	(Name and location of depository)		
6.2	CASH ON HAND		
6.3	CASH—UNDEPOSITED COLLECTIONS		
6.4	CASH—UNCONFIRMED DEPOSITS		
6.5	CASH IN CUSTODY OF GOVERNMENT CASHIERS		
6.6			
6.7			
6.8			
6.9			
7.1	DEFERRED CHARGES—VOUCHERED ITEMS		
7.2	RECEIVABLES—CHECK OVERDRAFTS		
7.3	LOSSES OF FUNDS		
7.4	RECEIVABLES—DISHONORED CHECKS		
7.5			
7.6			
7.7			
7.8			
7.9			
8.0	TOTAL OF MY ACCOUNTABILITY		\$

PART C.—ANALYSIS OF PREDECESSOR OFFICERS' ACCOUNTABILITY

9.2	RECEIVABLES—CHECK OVERDRAFTS	\$	
9.3	LOSSES OF FUNDS		
9.4	OTHER ACCOUNTABILITY		
10.0	TOTAL PREDECESSOR OFFICERS' ACCOUNTABILITY		
11.0	TOTAL DISBURSING OFFICE ACCOUNTABILITY (Name as line 5.0 above)		\$

PART D.—TREASURY FUNDING TRANSACTIONS (FORMS 503)

12.0	FUNDING INCREASES TO CHECKING ACCOUNT(S)	\$
13.0	FUNDING INCREASES TO OTHER BANK ACCOUNT(S)	\$

VI. CONCLUSIONS AND RECOMMENDATIONS

The application of sound cash management principles to the Federal Government's cash flow is appropriate and timely. The savings realized by the implementation of a cash management program within all departments and agencies may not make a significant impact on the current deficit, but when utilized in conjunction with other management improvement efforts, the cumulative effect on the way Federal Government conducts its business can be significant.

The implementation of the Treasury's cash management regulations, as well as other initiatives will take time. The new rules are consistent with sound cash management principles. Whether they are in the best interest of the Government overall is a question not yet answered. Several arguments have been developed in opposition to these rules [Ref. 18].

First, compliance with the rules would impose a significant workload on large-volume paying offices. Any savings which might accrue from decreased interest costs to the Treasury would not be automatically available to fund the increased costs of operation. Furthermore, these new expenses might well exceed the savings. In the Navy's case, the Integrated Disbursing and Accounting System (IDA) is scheduled to be fully implemented in 1982 and will have bill paying criteria as well as other cash management objectives programmed

into the system as it is designed. Until such time when IDA is fully implemented, conversion to accommodate the Treasury regulations will be costly.

Second, the regulations are deficient in that they permit the vendor to establish his own due date. The only restriction is that the date cannot be less than fifteen days following receipt and acceptance of the product.

Third, the vendors who have not established short-term due dates may find themselves in a cash bind. This might be particularly true of small vendors who depend on Government business for meeting their recurring expenses. In contrast, larger corporations are more likely to have contracts which preclude intentional delay of payments.

Finally, vendors who do experience adverse impacts on their liquidity will eventually raise prices to compensate for their reduced interest income. Thus, increased procurement costs will offset any savings to the Treasury.

The validity of the preceding arguments can only be determined after the new procedures have stood the test of time. The lack of specific data at this time makes all predictions highly speculative. Of immediate concern is the first argument. Given that there will be no increases in manpower or funding, can the Navy (for example) afford to implement the Treasury regulations?

Based on the data examined in this thesis, the following recommendations are offered:

A. CASH MANAGEMENT EDUCATION

In order for Federal Government's money managers to effectively implement the Treasury's regulations, they must understand them. Understanding of cash management principles is the goal to be attained, not blind adherence to regulations. In the Navy's case, a "module" on cash management could be included in the Supply Corps Officer Course conducted in Athens, Georgia. Additionally, the subject could be covered in the Practical Comptrollers Course offered at the Naval Postgraduate School, Monterey, California. Other services and agencies have similar educational operations in which the subject could be stressed.

B. FURTHER STUDY IN THE APPLICATION OF INVENTORY CONTROL THEORY TO OPTIMIZE CASH BALANCES

Inventory models have been used effectively to manage cash in the private sector. Application to Federal Government operations requires further study. There are "untapped" resources available to the Navy and other services to perform such work. For example, the Navy Comptroller General could sponsor a thesis research effort at the Naval Postgraduate School on inventory control techniques for cash. The study should be a joint effort, utilizing student(s) from the Operations Research curriculum and student(s) from the Financial Management curriculum. In this way there would be a blending of two areas of expertise; one student familiar with the quantitative aspects of inventory models, the other student familiar with financial aspects of the system.

C. RETENTION OF DISBURSING RECORDS

As discussed in Chapter V, the availability of summary data to the disbursing officer afloat is critical to the preparation of accurate forecasts. Copies of balance sheets and statements of accountability should be maintained on board the ship for at least three years. In this way accurate data are available to the disbursing officer regardless of when he reported to the command and would provide the "corporate memory" necessary to prepare cash forecasts.

In an organization the size of the Federal Government, "excess" cash aboard U.S. Naval vessels is not a big problem. For example, in 1977 total shipboard cash requirements (\$39.7 million) represents less than one half of one percent of the total amount for personnel compensation in the Government (\$53.7 billion) for the same year. The "problem" is simply easily identifiable and easily criticized.

Incentives for a ship's disbursing officer to minimize cash holdings are insignificant. He operates in a rather closed environment and his decision as to the level of cash carried will be on the high side--for no other reason than to keep from offending his shipmates by running out of cash. This is a far more binding constraint than having his name added to an auditor's file one or two years after the disbursing officer has left the ship.

Development of incentives for money managers at any level in the Government remains as a significant obstacle to sound

cash management. The data reviewed for this thesis talked around the issue of incentives and consequently this thesis does also. The fact is the only organizational unit of the Federal Government that has a real incentive to effectively manage cash is the Treasury; because the Treasury incurs the expense for not doing so. The remaining departments and agencies do not receive the benefit or incur the expense for their cash management efforts. Until they do, the author doubts whether the Government's efforts will be completely successful. Passing the benefits/expenses along to individual departments and agencies is essentially the crux of the Federal Government's cash disbursement problem. It is a difficult problem to solve and one that will require a change in the Federal Government's budgeting system. Perhaps this should be the focus of Federal cash management efforts. Meanwhile small branches of the cash management tree are being trimmed (excess cash aboard ships) when actually entire limbs (budget system revisions) need to be cut.

APPENDIX A

ECONOMIC ORDER QUANTITY MODELS INVOLVING CASH

The management of cash is very similar to the management of inventory. Some of the same tools and techniques that are used in inventory control can be applied to this problem. Research in the application of Economic Order Quantity (EOQ) or inventory models to cash management has been largely devoted to the private sector and therefore includes marketable securities as a cash-like asset.

The object in the exercise is to decide the optimum amount of cash to be obtained: (1) assuming certainty; and (2) assuming uncertainty. In meeting this objective it is necessary to keep two fundamental questions in mind: (1) when to replenish the inventory; and (2) how much to order for replacement [Ref. 13, p. 1].

Assuming Certainty

The problem is one of weighing the costs of going to the market for a new supply (order costs), against the carrying costs (interest and storage costs), to determine the optimum amount to order at one time. The following equation is used in inventory control to determine this optimum order size, assuming demand is known with certainty [Ref. 4, p. 56].

$$A = \frac{2KD}{K_C} \quad (1)$$

where

Q = the optimum order size
K = the cost per order (fixed)
D = the usage per time period
 k_c = the carrying cost per period of time

Translating the definition of symbols to fit the problem of cash administration:

Q = the optimum amount of cash to be obtained

K = the cost of obtaining money on a loan basis

D = the total amount of cash to be used in the next time period (month, quarter, etc.). This is assumed to be known with certainty.

k_c = the interest cost (expressed as an interest rate), in which is the cost of having cash on hand.⁶

Formula (1) establishes the relationship between the variables for a corporation which foresees expenditures of cash in excess of the amount it will generate internally. The optimum amount of cash to be sought or obtained to meet the demand for cash depends on the relationship between the fixed costs associated with borrowing outside funds (K:e.g., legal fees, registration fees, executives' time, etc.), the total amount needed during the period (D); and the net carrying costs of cash (k_c).

Example: Assuming the following values:

K = \$40,000, the fixed cost of making a financial transaction.

D = \$1,000,000, net outlay of cash expected in the next year.

k_c = .02 per year (assuming the cost of obtaining is .12 and that cash could earn .10).

⁶To compute k_c the interest earned on short-term marketable securities is subtracted from the interest cost of obtaining capital.

$$Q = \sqrt{\frac{2KD}{k_c}} = \sqrt{\frac{2 \times 40,000 \times 1,000,000}{.02}}$$

$$Q = \sqrt{4(10)^{12}} = 2\sqrt{10^{12}} = 2,000,000$$

The optimum amount of cash to be obtained is \$2,000,000. In the case where cash and marketable securities are held together as cash-like assets the amount would be the result of subtracting the amount of marketable securities held.

It should be noted that at the beginning of the period \$2,000,000 in cash will be on hand. At the end of the first year \$1,000,000 in cash would remain. Before the end of the second year a reorder point would be reached, and it would be necessary to recompute the optimum amount based on the information available at that time. The optimum amount of cash is affected by the square root of demand (i.e., amount of cash needed). If the expected usage increased four times, the optimum size would double.

The question of the reorder point becomes important. In this case, marketable securities provides a "float" so to speak and when they equal the amount of cash required for the next period, the reorder/replenish process should begin.

The model indicates that it is better to obtain funds and invest at a lower rate than to go to the market more often [Ref. 4, p. 57].

The model assumes that the demand for cash is and remains uniform. Uneven demand would affect disbursements.

Assuming Uncertainty

The model discussed in this section assumes that the demand for cash in the coming period is not known with certainty, but that a probability distribution of demand has been determined.⁷

One possible decision rule is to hold enough cash for the probability of running out of cash to be zero. This is not an optimum decision since it would mean holding large idle balances. A more desirable procedure would be to balance k_c , the costs of carrying funds, and C the cost of running out of cash, taking into consideration the probability distribution of demand for cash during the replenishment period.

Assume k_c is the cost per dollar of carrying cash for a given period of time, D is the amount of cash expected to be used during that period of time, C is a fixed penalty associated with being short of cash, R is the amount of cash which signals the time to replenish, and Q is the optimum size of borrowing. By equating the marginal expected cost of running out of funds and the marginal expected cost of having excess funds, and solving for the cumulative probability $F(R)$ the following is obtained [Ref. 4, p. 57]:

$$F(R) = \frac{Cf(R)}{k_c \frac{Q}{D}} \quad (2)$$

⁷To simplify computations the optimum order size is assumed to be known.

The symbol $F(R)$ represents the left side of the probability distribution for cash; it is the probability of demand being equal to or less than R (i.e., not running out of cash) during the period of arranging for new funds. The probability of running out of cash is $1-F(R)$. The rule is to hold enough cash so that the probability of not running out of cash is equal to $f(R)$.

The variable c is a fixed cost associated with being short or out of cash. The term $f(R)$ is the value of the density function at R . Since the values given in density tables are for a standard normal density function (mean, zero; standard deviation, one) it is necessary to convert the values from a normal density table by using the following relationship:

$$f(R) = \frac{f^*(R)}{\sigma} \quad (3)$$

where $f^*(R)$ is the value of the standard normal density function at R and σ is the standard deviation of the f density function. Equation (4) may be written:

$$F(R) = \frac{C f^*(R)}{k_c \frac{Q}{D}} \quad (4)$$

Example: Assume that the demand for cash in the next week is normally distributed with D , mean demand, being \$1,000,000. The distribution has a standard deviation of \$50,000. The amount of funds to be obtained is \$20,000,000. It is known that it takes a week to get new funds.

$c = \$4,000$ (cost of running out of funds)

$k_c = .001$ per week for each dollar held in excess of the amount demanded (annual rate is .052, assuming simple interest)

$$\begin{aligned} F(R) &= \frac{4,000 f^*(R)}{50,000 \times .001 \left(\frac{20,000,000}{1,000,000} \right)} \\ &= \frac{4,000 f^*(R)}{1,000} \\ &= 4f^*(R) \end{aligned} \quad (5)$$

Equation (5) may be solved by trial and error for the value R for which the equality holds. Table (A-1) presents the solution of order point.

TABLE A-1

<u>No. of Standard Deviations to the Right of the Mean</u>	<u>$f^*(R)$</u>	<u>$F(R)$</u>	<u>$4f^*(R)$</u>
2	.054	.977	.216
1.5	.130	.933	.520
1.4	.150	.919	.600
1.3	.171	.903	.684
1.2	.194	.885	.776
1.1	.218	.864	.872 ⁺
1.0	.243	.841	.968

Table A-1 indicates that 1.1 standard deviations to the right of the mean the equality is satisfied. The computations for the optimum amount of cash, R , are as follows:

$$R = \bar{D} + 1.1(\sigma)$$

$$= \$1,000,000 + 1.1 (50,000) = \$1,055,000.$$

New funds should be obtained when the amount of cash is \$1,055,000. Since there is a carrying cost of .001 or \$1 per \$1,000 per week, the computations indicated that there is a significant probability of running out of cash (.14).⁸ This example assumes the optimum amount of cash to be obtained was already determined. Actually the solutions for the order point and the optimum amounts interact and the equations should be solved simultaneously [Ref. 4, p. 59].

⁸ $1-F(R) = .14.$

APPENDIX B

CHAPTER 8000 - CASH MANAGEMENT

<i>Section</i>	<i>Paragraph</i>	<i>Title</i>
8010	SCOPE AND APPLICABILITY	
8015	AUTHORITY	
8020	BILLINGS AND COLLECTIONS	
	8020.10	Timeliness
	8020.20	Charges for Late Payments
	8020.30	Volume and Character of Collections
	8020.40	Use of Treasury Financial Communications System (TFCS) for Collections
8030	DEPOSITS	
	8030.10	General
	8030.20	Processing Deposits
	8030.30	Frequency of Deposits
	8030.40	Timeliness of Deposits
	8030.50	Reporting Large Deposits
8040	DISBURSEMENTS	
	8040.10	General
	8040.20	Timeliness of Disbursements
	8040.30	Cash Discounts
	8040.40	Use of Treasury Financial Communications System (TFCS) for Payments
	8040.50	Late Payments
	8040.60	Reporting Large Disbursements
8050	CASH ADVANCES	
	8050.10	General
	8050.20	Timeliness of Advances
	8050.30	Interest Earned on Balances
	8050.40	Recoveries of Disallowed Expenditures
8060	CASH HELD OUTSIDE TREASURY	
	8060.10	Cash Held at Personal Risk, Including Imprest Funds, by Disbursing Officers and Cashiers
	8060.20	All Other Cash Held Outside Treasury

Continued

<i>Chapter</i>	<i>Paragraph</i>	<i>Title</i>
8070		FOREIGN CURRENCY
	8070.10	General
	8070.15	Definition of Terms
	8070.20	Designation of Financial Institutions to Maintain United States Government Operating Accounts
	8070.25	Operating Account Balance Limitations
	8070.30	Acquisition of Foreign Exchange
	8070.40	Disposition of Excess Balances
	8070.50	Interest on Deposits
	8070.60	Limitations
	8070.70	Disbursements
	8070.75	Rate of Exchange
	8070.80	Utilization of Excess and Near-Excess Currencies
8080		RESPONSIBILITIES OF AGENCIES
	8080.10	General
	8080.20	Regulations
	8080.30	Review
	8080.40	Reports to the Treasury
8090		WAIVERS, EXEMPTIONS, AND OTHER APPLICABLE REGULATIONS
	8090.10	Waivers
	8090.20	Exemptions
	8090.30	Other Applicable Regulations
8095		INQUIRIES
Appendix No. 1		Treasury Department Circular No. 1084

CHAPTER 8000 – CASH MANAGEMENT

Section 8010 – SCOPE AND APPLICABILITY

This chapter prescribes the procedures to be observed by affected Government organizations to assure effective management of the Government's cash when developing regulations, systems, and procedures, and conducting financial activities encompassing billing and collections, deposits, disbursements, cash advances, and cash held outside the cash account of the Treasury.

These procedures are applicable to all Government departments and agencies whose financial transactions affect the cash account of the Treasury, and provide the guidelines for use in establishing effective cash management practices.

Section 8015 -AUTHORITY

Treasury Department Circular No. 1084 (Appendix No. 1 to this chapter) establishes the policy regarding cash management practices within the Federal Government relating to the development and promulgation of regulations, systems, and procedures; and requires that agencies conduct financial activities in a manner which will make available to the Treasury on a continuing basis the maximum amount of cash for purposes of investment and to avoid unnecessary borrowing.

Section 8020 – BILLINGS AND COLLECTIONS

8020.10 – Timeliness. Agencies responsible for the preparation of invoices for goods or services to individuals and organizations outside the U.S. Government will ensure that the preparation and dispatch of each invoice is effectuated within one working day after the day the billing office is advised that the goods have been shipped or released or the services completed. The payment due date will be 30 days from the date of the invoice. If the actual value of the goods or services cannot be determined on the day the invoice is to be prepared, and the estimated value is less than \$50,000, billing will be accomplished within one working day after the actual value is determined. If the actual value of the goods or services cannot be determined on the day the invoice is to be prepared, and the estimated value is \$50,000 or more, partial billing, identified as such, will be accomplished for not less than 75% of the estimated value, with a statement that the final billing will be completed when the actual value is determined. Partial billing will also be accomplished when the estimated value is less than \$50,000 and determined to be cost effective by the agency.

Contracts which authorize the sale of goods or services to an organization outside the U.S. Government will include provisions which:

- Establish a definite payment due date,
- Require that payment be received no later than the due date,
- Provide for payment by wire where applicable, and
- Provide for additional charges for payments received after the due date.

8020.20 – Charges for Late Payments. Except where prohibited or expressly provided for by law, agencies will ensure that charges for late payments are stipulated in all contracts, agreements, or other formal payment arrangements at the rate of 3/4 of 1% (.0075) of the overdue payment, for each 30-day period or portion thereof that the payment is delayed, and that such charges are

collected for payments received after the due date. Charges for late payments will not be made in any case where they are not provided for by contract, agreement, or other formal payment arrangement. When an agency determines that the administrative cost of collecting late charges exceeds the amount of the charges, it may at its discretion waive such charges. However, such determination and the supporting factors must be reflected in agency cash management regulations (see I TFRM 6-8080.20).

The collection of charges for late payments will be promptly deposited for credit to the General Account of the U.S. Treasury. A six digit account symbol will be used. The first two digits identify the agency administratively responsible for accounting for the receipts. The last four digits (1499) identify the account within the fund group as "Miscellaneous Interest Collections Not Otherwise Classified" (see I TFRM 2-1500).

8020.30 – Volume and Character of Collections. The procedures used for collecting funds for credit to the account of the U.S. Treasury are generally left to the determination of the responsible agency. In developing procedures, agencies should consider the full range of options available including centralization, decentralization, lock boxes, wire funds transfers, and other banking services; but especially consider the Treasury Financial Communications System (TFCS). The procedures that are developed should have as their objective the minimization of total cost to the Government as a whole including agency direct costs, the cost of purchased services, and the interest cost of the money involved in the collection system.

Major changes in collection systems or procedures will only be made with the approval of the Banking Staff (see TFRM 6-8095) and after consultation with that staff for, among other things, the development of a comprehensive cost/benefit analysis. Requests for final approval of such changes must be submitted to the Banking Staff at least 90 days prior to the date on which the change is to take place and must be accompanied by the cost/benefit analysis.

8020.40 – Use of Treasury Financial Communications System (TFCS) for Collections. Agencies responsible for the receipt of large payments, either periodic or one time remittances, will explore the use of the TFCS (see I TFRM 5-4500). Under this system, payers are instructed to have their bank wire the funds through the Federal Reserve System to the account of the U.S. Treasury at the Federal Reserve Bank of New York. It will be necessary for the responsible agency to furnish the payer the account symbol number and any additional administrative data deemed necessary to assure proper credit. The Treasury will furnish the receiving agency with a copy of all TFCS transmission data received each day accompanied by a consolidated certificate of deposit for agency reporting purposes. Approval by the Fiscal Assistant Secretary or his designee must be obtained prior to the use of the system for deposits. Requests for approval should be forwarded to the Banking Staff (see I TFRM 6-8095). When it is deemed warranted, the Fiscal Assistant Secretary or his designee will require a department or agency to utilize the system for the direct deposit of collections.

Section 8030 – DEPOSITS

8030.10 – General. In addition to collecting receipts in a timely manner, each agency will deposit its receipts to the general account of the Treasury on a timely basis. Any reference in this section to a deposit will be regarded as a deposit to the General Account of the U.S. Treasury. The procedures in this section govern the cash management aspects of agency deposits. The mechanism for making such deposits are included in Part 5 of Volume I, TFRM.

8030.20 – Processing Deposits. In order to expedite the flow of funds to the Government, agencies will design their processing system to separate payments received (checks, money orders, etc.) from accompanying accounting documents at the initial stage of processing and deposit the payments promptly. Agencies normally processing over five thousand items per day for deposit will incorporate the use of amount encoders in their deposit operations.

8030.30 – Frequency of Deposits. The frequency of deposits will be determined by the daily dollar volume of funds received by a depositing office. The basic requirements governing the frequency of deposits are:

- Receipts of \$1,000 or more will be deposited on a daily basis; and
- Receipts of less than \$1,000 may, at the discretion of the agency, be accumulated and deposited when the total reaches \$1,000; however, deposits will be made no less frequently than weekly regardless of the amount accumulated.

8030.40 – Timeliness of Deposits. Deposits made over the counter with Federal Reserve Banks and Branches will be made as soon as practical, but no later than noon on the business day following receipt or accumulation of \$1,000 or more. Deposits mailed to Federal Reserve Banks and Branches will be dispatched no later than the morning of the business day following receipt or accumulation of \$1,000 or more. Except where specifically authorized by the Banking Staff (see I TFRM 6-8095) deposits will not be mailed to commercial banks. For deposits made over the counter with commercial bank depositories, the depositor will establish a “cut-off” time at the latest practical time so that the maximum amount of funds will be deposited each day. Regardless of where the deposits are made, depositors will endeavor to limit their transmittals of deposits to no more than one each day.

8030.50 – Reporting Large Deposits. Since the Department of the Treasury must manage its balances at each Federal Reserve Bank on a daily basis, large transactions affecting these balances must be reported accordingly. Therefore, financial officers depositing a total of \$10 million or more in one transaction, other than Treasury checks, will report on the day of deposit the name of the agency, the amount deposited, and the name and location of the depository by wire (commercial facilities, TWX 7108229201, 02, 03, or 04) to:

Funds Control Section
Division of Government Accounts and Reports
Bureau of Government Financial Operations
Department of the Treasury
Treasury Annex No. 1, GAO Building
Washington, D.C. 20226

Section 8040 – DISBURSEMENTS

8040.10 – General. Invoices, bills, statements, or any other documents (hereinafter referred to as “invoices”) which are authorized for payment by an agency, including progress and final payments, will be paid when due. Accounting systems will be designed to facilitate an agency’s financial responsibilities and ensure the necessary degree of control over the timely payment of invoices and the taking of appropriate discounts.

8040.20 – Timeliness of Disbursements. An agency’s payment system will be designed to provide for scheduling the issuance and mailing of checks for receipt by the payee as close as administratively possible to the due date as specified in the invoice, contract, or other agreement. If no due date is specified, the due date will be considered to be on the thirtieth (30) day from receipt of the invoice and payment will be scheduled to be made on that date. If the goods or services are not received by the 15th day before the due date of an invoice, payment will be made no later than 15 days from the receipt of goods and services, but not prior to the due date. Payments will not be made on invoices prior to the receipt of the related goods and services by an agency or its duly authorized agent, except as specifically provided by contract or other agreements executed pursuant to law.

8040.30 – Cash Discounts. Agency payment systems will incorporate procedures which will automatically take advantage of cash discounts as a matter of routine and eliminate any need for special handling. Such discounts will be taken when the discount rate is equivalent to, or greater than, 1% in 10 days, net 30 days. Lesser discounts, but in no case less than 1/2% in 10 days, net 30 days or equivalent, may be taken by an agency after its determination that such discounts would be cost effective, considering its own operations. All discounted payments will be scheduled for check issuance on the last day of the discount period. However, payments will not be made to achieve discounts unless the related goods or services have been received except as specifically provided by contract or other agreements executed pursuant to law.

8040.40 – Use of Treasury Financial Communications System (TFCS) for Payments. Agencies will use the TFCS for vendor payments only when such use is clearly advantageous to the Government (see I TFRM 4-2500). Approval by the Fiscal Assistant Secretary or his designee must be obtained before Government departments or agencies utilize the system for any particular class or type of payment. Requests for approval should be forwarded to the Banking Staff (see I TFRM 6-8095).

8040.50 – Late Payments. Agencies will make every effort to make payments of Government obligations in a timely manner. With the exception of payments involving disputed invoices or late or non-receipt of goods and services, payments not accomplished within thirty days of receipt of an invoice will be considered as late payments, which will be reviewed by agencies and reported to the Treasury (see I TFRM 6-8080.40).

8040.60 – Reporting Large Disbursements. Since the Department of the Treasury must manage its cash position on a daily basis, large disbursement transactions must be reported accordingly. Therefore, financial officers disbursing \$10 million or more in one transaction will report on the day of the disbursement the name of the agency, the amount disbursed, the name and address of the payee (or payee's bank if funds are so directed), and the method of disbursement to the Funds Control Section (see I TFRM 6-8030.50).

Section 8050 – CASH ADVANCES

8050.10 – General. It is the responsibility of grantor agencies to monitor the cash management practices of their recipient organizations to ensure that Federal cash is not maintained by them in excess of immediate disbursing needs (see I TFRM 6-2000). Agencies will establish such systems and procedures as may be necessary to assure that balances are maintained commensurate with immediate disbursing needs, excess balances are promptly returned to the Treasury, and, except where contrary to law, interest earned on Federal funds by recipient organizations is promptly paid over to the Treasury; and advance funding arrangements with recipient organizations unwilling or unable to comply with Treasury regulations are terminated in accordance with the provisions of I TFRM 6-2075.

8050.20 – Timeliness of Advances. Procedures established by agencies will specify that all contractual arrangements with recipient organizations will provide that advance payments will be made only at times and in amounts necessary to meet immediate disbursing needs. In those cases where large amounts of funds are disbursed on a daily basis under the letter-of-credit system, agencies will require that grantees not under a checks paid arrangement give consideration to the delay of drawdown technique when submitting payment vouchers. Under this system, consideration is given to the float on checks written by the grantee prior to the submission of a payment voucher to cover these disbursements. In monitoring the practices of recipient organizations, agencies will base evaluations on cash payments and not on accrued liabilities.

8050.30 – Interest Earned on Balances. Except where specifically prohibited by law, agencies will require that all interest earned by recipients on advances of Federal funds be remitted to the agency. The agency will promptly deposit such interest in the General Account of the U.S. Treasury. A six digit account symbol will be used. The first two digits identify the agency

administratively responsible for accounting for the receipts. The last four digits (1499) identify the account within the fund group as "Miscellaneous Interest Collections Not Otherwise Classified" (see I TFRM 2-1500).

8050.40 - Recoveries of Disallowed Expenditures. Immediately upon determination that an expenditure of advance funds is disallowable in accordance with the terms of the contractual arrangement, an agency will require the return of such funds as soon as possible, but under no circumstances more than thirty days from the date of notification by the agency. Except when prohibited by law, each agency will take appropriate measures to ensure that no further withdrawals are made under a letter-of-credit arrangement with a recipient pending disposition of recovery action with that recipient.

Section 8060 - CASH HELD OUTSIDE TREASURY

8060.10 - Cash Held at Personal Risk, Including Imprest Funds, by Disbursing Officers and Cashiers. Agencies will, no less frequently than once each quarter, review funds held by their accountable officers to ensure that such funds are commensurate with actual needs and do not exceed the maximum limitations (see I TFRM 4-3000).

8060.20 - All Other Cash Held Outside Treasury. Agencies which are authorized to maintain funds with depositaries for specific purposes, or to control the maintenance of such funds, will establish procedures to monitor such accounts on a continuing basis to ensure that:

- Fund balances are maintained at the minimum amount necessary to meet immediate disbursement needs (checks issued and in process) and are commensurate with the activity in the account;
- Funds in excess of the immediate needs for which the account was established are promptly withdrawn from such account and deposited with the Treasury; and
- Where fund balances as authorized by Treasury or provided by law may bear interest, such interest be at the highest possible interest rate commensurate with the administration of the account.

Section 8070 - FOREIGN CURRENCY

8070.10 - General. This section reflects the Department of the Treasury's cash management policy as it relates to the purchase, custody, deposit, transfer, sale, and utilization of foreign exchange.

Procedural instructions regarding the receipt and disposition of foreign exchange owned by the United States Government may be found in:

- I TFRM 2-1000, Appendix No. 1 (T.D.C. No. 930, Revised) "Regulations Governing Foreign Exchange Operations,"
- I TFRM 2-3100, "Reports of Disbursing Officers of the United States,"
- I TFRM 2-3200, "Foreign Currency Accounting and Reporting,"
- I TFRM 4-2080, "Foreign Currency Payments,"
- I TFRM 4-3000, "Cash Held at Personal Risk Including Imprest Funds By Disbursing Officers and Cashiers,"
- I TFRM 4-8000, "Designated Depositary Checking Accounts,"
- Treasury Department Circular No. 830, Revised, "Regulations Governing Transactions By Treasury Department Disbursing Officers," and
- Office of Management and Budget Circular No. A-20.

8070.15 – Definition of Terms

- **Accountable Officer.** This term means every Government Officer authorized to maintain, in his own name, official accounts of the United States in depository banks designated by the Secretary of the Treasury and to draw checks thereon.
- **Excess Currencies.** This term refers to U.S. owned foreign currencies in excess of the normal requirements (generally a two-year supply) of U.S. Government agencies within the country involved.
- **Near-Excess Currencies.** This term refers to U.S. owned foreign currencies which are sufficient to exceed the U.S. Government's immediate needs within the country involved, but are not sufficient to be declared excess.
- **Treasury Prevailing Rate.** This term refers to the rate in each country that would be legally available to the U.S. Government for the acquisition, in the local exchange market, of foreign exchange for its official disbursements.
- **Treasury's Minimum/Maximum Funding Procedure.** This term refers to a procedure whereby local currency checking accounts are funded based on actual bank balances rather than accountable officer check book balances, i.e., once the actual bank balance is reduced below a specified amount (minimum balance) an immediate replenishment of the account is made to restore the bank balance to a predetermined level (maximum balance). Normally, the minimum bank balance is a three day supply of currency and the maximum bank balance is a seven day supply of currency. The purpose of this procedure is to capture the float between the time local currency checks are issued and the time they are paid by the bank upon which they are drawn.

8070.20 – Designation of Financial Institutions to Maintain United States Government Operating Accounts. The Department of the Treasury's policy in selecting the financial institutions which will maintain a United States Government operating account pursuant to 31 U.S.C. 473 is predicated on the most beneficial banking arrangement available to transact essential Government business. Preference will be given to American financial institutions unless a local bank's arrangement is clearly more advantageous to the United States Government.

In determining the most beneficial banking arrangement, Treasury will consider three areas of service: (1) minimum required service, (2) customary local banking practices, and (3) other special services which may be deemed necessary in a particular country or circumstance. The required services will be, at a minimum, the capability to honor payments to payees in outlying areas, the processing of checks and deposits, the submission of a monthly bank statement, and the acceptance of Treasury's minimum/maximum funding procedures whenever applicable. In addition, any customary banking practices (such as payment of interest on the operating account, waiver of miscellaneous charges, preferential exchange rates on purchases with U.S. dollars, etc.) peculiar to a particular country will be considered required for purposes of carrying out the provisions of the statute. Consideration will also be given to special services which a bank would be willing to provide in addition to the minimum required and customary local banking services (i.e., telex cost, funds transfer, overdrafts, armored car service, etc.).

The operating account will not be used to subsidize banking services that would otherwise be funded through the appropriation process. The level of the balance will be determined solely by disbursing requirements.

As a general rule, an operating account will not be subject to transfer more frequently than every two years.

8070.25 – Operating Account Balance Limitations. In order to (1) minimize local currency operating bank balances, (2) minimize losses due to rate devaluations, and (3) avoid premature drawdowns on the General Account of the U.S. Treasury which, in turn, will (a) result in interest savings to the U.S. Government, and (b) have a favorable impact on the U.S. balance of payments, all accountable officers will ensure that the amount of foreign exchange purchased with U.S. dollars is commensurate with immediate disbursing requirements. Specifically, if foreign currencies can be readily obtained, the accountable officer should purchase an amount that, together with the checkbook balance on hand at the time of purchase, would not exceed the estimated requirements for the ensuing two to three day period. If the foreign currency is not readily available, the accountable officer should purchase foreign exchange in an amount that, together with the checkbook balance on hand at the time of purchase, would not exceed the estimated requirements for the ensuing seven-day period. The foregoing requirements are applicable only to accounts that are funded based on the accountable officer's checkbook balance. They do not apply to the funding of accounts in which the level of actual bank balances has been established or concurred with by Treasury.

The seven-day maximum funding level may not be exceeded without a specific waiver of this requirement from the Foreign Currency Staff (see I TFRM 6-8095).

It is recognized that this limitation may not consistently be to the advantage of the United States Government because of the high interest rates received on certain foreign exchange balances and also because of the stability of certain currencies. Therefore, as determined by Treasury, specific accountable officers may be authorized to fund and maintain their foreign exchange accounts on a basis different from the foregoing requirements either as to frequency of purchases or balances to be maintained in the accounts.

8070.30 – Acquisition of Foreign Exchange

8070.30a – Commercial Purchases. Accountable officers or their duly authorized agents, whether purchasing for their own or other accountable officers' accounts, are to ensure that foreign exchange purchased commercially is purchased at the highest legal rate obtainable from a legally authorized exchange dealer. When foreign exchange is purchased at nonfixed rates, bids should be solicited from at least three sources, if available. This solicitation includes canvassing markets outside the country whose currency is being purchased, providing the capability exists and it is feasible to do so. If foreign exchange is purchased commercially at a fixed rate, including diplomatic rates or special rates established by agreement with the authorities of the country, the accountable officer or a duly authorized agent should ascertain that the rate received is the most favorable applicable to each transaction. Accountable officers or their agents may purchase foreign exchange from the Government or other legally authorized sources at rates more favorable than the official rate only if the accountable officer or agent has specific authority to do so from the Department of the Treasury. Specific requests should be made to the Foreign Currency Staff (see I TFRM 6-8095).

8070.30b – Collections. Foreign exchange collected by agencies will be delivered promptly into the custody of accountable officers for credit to accounts maintained by the Department of the Treasury. Exceptions to this requirement can only be authorized by the Secretary of the Treasury. Accountable officers will be advised by the collecting agencies of the source of the collections and any restrictions on their use.

8070.30c – Currency Use Payments. Agreements under the Agriculture Trade Development and Assistance Act of 1954 (P.L. 480) normally require the payment for Surplus Agricultural Commodities in U.S. dollars. However, in non-excess currency countries, where U.S. dollars are being used to purchase foreign exchange commercially, a Currency Use Payment (CUP) provision may be inserted in the Agreement whereby a percentage (ranging from 5% to 30%) of the dollar amount of the agreement may be paid in the currency of the country. In those

countries where P.L. 480 Agreements contain CUP provisions, all requests for CUP should be on an as-needed basis to avoid purchasing commercially. Such requests should be made only after all other U.S. owned currencies have been exhausted, including those available through unfunding. United States Disbursing Officers and Regional Disbursing Officers, or their local agents, are responsible for contacting the American embassy in each country having a CUP agreement to determine the existence of any U.S. military requirements for currency. If the military is present, their immediate needs should be included in the request for CUP, thereby delaying expenditure of U.S. dollars by the military.

8070.30d - Unfunding. All foreign transaction (FT) program accounts susceptible to unfunding are to be fully unfunded prior to purchasing commercially. Foreign exchange held by accountable officers in program accounts may be used for any U.S. Government expenditure through the use of a contra account established by Treasury until such time as they are required in connection with the particular program intended. The accountable officer may then purchase commercially with U.S. dollars, if necessary, to reimburse the program account. This unfunding procedure delays drawdowns on the General Account of the U.S. Treasury.

8070.40 - Disposition of Excess Balances. An attempt should be made to transfer those foreign currencies in excess of immediate disbursing requirements that may be utilized by other accountable officers (such as Military, State, or Treasury) in a particular locality. Currencies obtained in designated excess or near-excess currency countries must be acquired from sources provided by the U.S. Government. The American embassies in these countries may be contacted concerning their acquisition. In non-excess currency countries accountable officers having excess balances should initiate action to effect transfers with other accountable officers using like currencies.

8070.50 - Interest On Deposits. An interest bearing account will be established if the collection of foreign currency causes the non-interest bearing account (local currency checking account) to exceed a 30-day supply and all attempts to sell currencies to other accountable officers have been exhausted (see I TFRM 6-8070.40). In such cases, the accountable officer should immediately place all funds that are in excess of the operating account balance limitation (see I TFRM 6-8070.25) in a short-term interest bearing account, if such an account is available. The deposit must be placed with a bank that has been designated as a Depository of Public Moneys by the Department of the Treasury. For administrative simplicity, the accountable officer will place the excess funds in an interest bearing account with the bank that maintains the operating account, unless a more beneficial banking arrangement can be made promptly with another designated depository. Upon establishment of such an account, the accountable officer will furnish the name of the bank, the account number, the interest rate obtained, and the conditions and terms of the deposit by telegram to the Foreign Currency Staff (see I TFRM 6-8095).

In addition, if the balance is in excess of a six-month supply, this fact will be included in the telegram to Treasury. The accountable officer will then canvass the market to obtain the highest interest rates legally available for 3 months, 6 months, and one-year time deposits and submit this information to Treasury along with a proposed schedule for the placement of the excess balance, commensurate with disbursing requirements, for approval by Treasury. The accountable officer is responsible for monitoring the interest bearing accounts to ensure that interest is being paid on a timely basis and in accordance with agreements reached between the accountable officer and the banks.

8070.60 - Limitations

8070.60a - Unless otherwise authorized by the Secretary of the Treasury, no agency or accountable officer will purchase or direct the purchase of foreign exchange from any source

outside the Government of the United States, except when exchange for the purpose intended is not available for purchase from accounts maintained by the Treasury.

8070.60b – In excess and near-excess currency countries, when the Treasury authorizes a transfer of foreign currencies to an agency account for the purpose of making an authorized expenditure, pursuant to an OMB allocation or an international agreement, the actual foreign currencies will be maintained by Treasury for the agencies. If, at a later date, an agency determines that the transfer so authorized is in excess of its needs, the agency is responsible for promptly arranging with Treasury to reduce the original authorization, thereby enabling Treasury to make these funds available for other official requirements.

8070.70 – Disbursements. The same cash management policy applicable to domestic disbursements is also applicable to foreign exchange disbursements (see I TFRM 6-8040).

8070.75 – Rate of Exchange. Exchange transactions for accommodation purposes or for official expenditures will be computed in such manner as to preclude losses insofar as possible due to fluctuations in rates of exchange. Unless otherwise authorized by the Treasury, the rate used on converting foreign currency expenditures to dollars for accounting purposes should ordinarily be the prevailing rate.

8070.80 – Utilization of Excess and Near-Excess Currencies. Utilization of excess and near-excess currencies will be governed by the following:

- Obligations in excess and near-excess currency countries will be made payable in the currencies of those countries rather than in U.S. dollar.
- Every effort will be made to include in contracts with American contractors that obligations will be made payable in foreign exchange of excess and near-excess currency countries to the extent that the contractor may be expected to require such exchange for necessary expenses in the country involved. Provision will be inserted in each contract, whenever possible, requiring that U.S. dollars not be expended in an excess or near-excess currency country and that the foreign currency needed to carry out the contract be obtained solely from the accountable officer.
- Allowances (cost of living, housing, etc.) to employees, uniformed personnel, and others under U.S. Government sponsorship in any of the excess or near-excess currency countries will be paid in local currency to the extent possible under existing law.
- Employees, uniformed personnel, and others under U.S. Government sponsorship in any of the excess or near-excess currency countries will use the accommodation exchange services provided by the U.S. Government, or their delegated agents, to exchange checks, drafts, bills of exchange and other instruments payable in U.S. dollars for local currency.

Section 8080 – RESPONSIBILITIES OF AGENCIES

8080.10 – General. It is the responsibility of every department and agency subject to these regulations to incorporate the provisions contained herein in their billing and collection, accounting, and disbursing systems, and as an integral part of their comprehensive audit and review program.

8080.20 – Regulations. Each agency will develop written internal regulations covering the subject of cash management within six months after the release of this Chapter. All agency activities and operations impacting on the flow of funds to and from Government accounts and the balances in such accounts will be covered by those regulations which will become effective upon the date of release. Provisions of existing contracts and other formal agreements not in compliance with the

regulations on the date of release, which contracts are subject to renegotiation and amendment, will be amended upon the next renegotiation of such arrangements. A copy of agency regulations will be furnished, upon request, to the Special Financing Staff (see I TFRM 6-8095).

8080.30 – Review. Within three months of the completion of an agency's written internal regulations, each agency will establish a system for monitoring its cash management practices to ensure compliance with those regulations. The system will provide for periodic, but no less frequent than annual, review of the agency's cash management practices.

8080.40 – Reports to the Treasury. Documentation summarizing reviews of the agency's cash management practices will be furnished to the Special Financing Staff (see I TFRM 6-8095) upon completion. Copies of agency's internal audit reports relating to the subject of cash management will be furnished to the Special Financing Staff upon request.

In addition, agencies will report large deposits, large disbursements, and the establishment of interest bearing foreign currency accounts in accordance with the provisions of I TFRM 6-8030.50, 8040.60, and 8070.50.

Section 8090 – WAIVERS, EXEMPTIONS, AND OTHER APPLICABLE REGULATIONS

8090.10 – Waivers. Requests for waivers to specific provisions of these requirements may be submitted to the appropriate staff (see I TFRM 6-8095) for consideration. Such request should identify the specific requirement, state the reason for the request, the period of time to be covered by the waiver, and any documentation in support of the request.

8090.20 – Exemptions. Departments and agencies subject to Treasury regulations with programs which are exempt by law from one or more provisions of these regulations should so advise the Special Financing Staff (see I TFRM 6-8095) of the applicable program, the governing law, and the conflicting provision.

8090.30 – Other Applicable Regulations. The provisions of this chapter are designed to supplement existing regulations bearing on the subjects covered herein and do not relieve departments and agencies from compliance with OMB, GAO, and other Treasury regulations.

Section 8095 – INQUIRIES

Inquiries concerning the provisions of this chapter, requests for waivers, required reports and supporting data should be forwarded to the staff indicated in the applicable section as follows:

Banking Staff
Bureau of Government Financial Operations
Department of the Treasury
Treasury Annex No. 1
Washington, D.C. 20226
(Telephone 202-566-5665)

Foreign Currency Staff
Bureau of Government Financial Operations
Department of the Treasury
Treasury Annex No. 1
Washington, D.C. 20226
(Telephone 202-566-5183)

Special Financing Staff
Bureau of Government Financial Operations
Department of the Treasury
Treasury Annex No. 1
Washington, D.C. 20226
(Telephone 202-566-5125)

General inquiries concerning the provisions of this chapter may be addressed to the Special Financing Staff.

APPENDIX NO. 1

REGULATIONS GOVERNING CASH MANAGEMENT PRACTICES
WITHIN THE FEDERAL GOVERNMENT

1976
Department Circular No. 1084

Department of the Treasury
Washington, D.C. 20220

Fiscal Service
Bureau of Government
Financial Operations

TO HEADS OF GOVERNMENT DEPARTMENTS AND AGENCIES AND OTHERS CONCERNED:

1. Authority. The provisions of this Circular issued under 5 U.S.C. 301 and 31 U.S.C. 484, 492(a), 492c, and 1002.

2. Purpose. The Treasury Department historically has maintained a close watch on Government-wide cash balances and has conducted a sustained effort to minimize cash held outside of the cash account of the Treasury, and thereby unavailable for use, through requirements relating to such matters as deposit transactions and advance funding operations. This effort has been carried on in recognition of the value of Treasury's cash balances as an earning asset carried with Federal Reserve Banks, as a means of avoiding unnecessary borrowing, and as a means of offsetting expenses incurred by commercial banks in carrying out essential Government business. These regulations are issued for the purpose of broadening this Department's overview of agencies' cash management practices and establishing the requirements pursuant to which Government departments and agencies will conduct their activities involving the Government's cash so as to maximize the amount of cash available to this Department and preclude unnecessary borrowing.

3. Scope. These regulations are applicable to all Government departments and agencies whose financial transactions affect the cash account of the Treasury. Cash management practices relating to billings and collections, deposits, disbursements, cash advances under Federal grant and other programs by letters of credit and other means, and cash held outside the Treasury are covered.

4. Policy. Agency regulations, systems and procedures, relating to transactions which affect the cash account of the Treasury shall be developed to ensure that financial activities are conducted in a manner which (a) will make the maximum amount of cash available to this Department on a continuing basis and preclude unnecessary borrowing, (b) gives full consideration at all times to the earning value of Treasury cash balances in determining the cost/benefit relationship of financial decisions, and (c) incorporates the cash management practices described in section 5 through 9 of this Circular.

5. Billings and Collections.

- (a) Billings to organizations outside the Government shall be prepared and transmitted promptly and shall bear a clear indication of the requirement for timely payment to ensure that funds are received promptly.
- (b) An agency's collection system shall be designed so as to give explicit consideration to the volume and character of the collections and the availability of cash to the Treasury.

- (c) An agency's collection system shall include procedures which provide for prompt and continuing action to collect its receivables, and the aggregate amount of its receivables outstanding shall be kept to the minimum amount possible.
- (d) Any contract or agreement which governs the sale of goods or services to an organization outside the Government shall include a payment schedule.

6. Deposits.

- (a) In all cases, the deposit of funds (both U.S. dollars and foreign currencies) for credit to the account of the Treasury shall be made as expeditiously as possible.
- (b) An agency's deposit system shall incorporate procedures which will allow for prompt deposit of funds; e.g., separation of the flow of receipts from the flow of related documents at the earliest possible processing point.
- (c) Agencies may utilize the Treasury's Electronic Funds Transfer System for the receipt of deposits, and will be required by this Department to do so when it is deemed warranted by the Fiscal Assistant Secretary or his designee, in accordance with Department Circular No. 1083, dated June 21, 1976.

7. Disbursements.

- (a) An agency's payment system shall be designed so that payment is made by the due date specified on the invoice provided that the related goods or services have been received. If no due date is specified, payment shall be made within a reasonable period of time after receipt of the invoice or the related goods or services, whichever is later.
- (b) Such payment system shall incorporate procedures which will allow the agency to automatically take advantage of cash discounts as a matter of routine and eliminate any need for special handling.
- (c) Agencies shall not make payment on an invoice in advance of the receipt of the related goods or services except as specifically authorized by law.
- (d) Agencies may utilize the Treasury's Electronic Funds Transfer System to effect payments only with the prior approval of the Fiscal Assistant Secretary or his designee, in accordance with Department Circular No. 1083, dated June 21, 1976.

8. Cash Advances Under Federal Grants and Other Programs. It is the responsibility of grantor agencies to monitor the cash management practices of their recipient organizations to ensure that Federal cash is not maintained by them in excess of that required for immediate disbursement needs. Treasury requirements with respect to this activity are set forth in Department Circular No. 1075, as revised (31 CFR Part 205), and Chapter 2000, Part 6 of Volume I of the Treasury Fiscal Requirements Manual.

9. Cash Held Outside Treasury.

- (a) Cash Held at Personal Risk Including Imprest Funds by Disbursing Officers and Cashiers. Funds are held by agencies' accountable officers pursuant to the provisions of Department Circular No. 1030, as revised, and Chapter 3000, Part 4 of Volume I of the Treasury Fiscal Requirements Manual. Agencies shall periodically review such funds to ensure that the fund balances are commensurate with actual needs and do not exceed maximum limitations.
- (b) All Other Cash Held Outside Treasury.

- (i) Agencies which are authorized to maintain funds with depositaries for specific purposes, or to control the maintenance of such funds, shall ensure that any portion of the funds in excess of the immediate needs for which the account was established is promptly withdrawn from such account and deposited with the Treasury.
- (ii) Agency procedures for handling funds in depositaries shall be designed to ensure, on a continuing basis, that fund balances are maintained only in the minimum amounts required to cover immediate disbursement needs.
- (iii) Where fund balances maintained on a demand basis with a depositary may by law bear interest, as with some foreign currencies, agency procedures shall require that the highest possible interest rate commensurate with administration of the account be obtained.

10. Agency Responsibilities. The cash management principles set forth herein, as well as the detailed requirements forthcoming in the Treasury Fiscal Requirements Manual, shall be incorporated in each agency's financial systems and in the written procedural requirements for such systems, and shall be made an integral part of the agency's comprehensive audit program. The head of each agency shall ensure the following:

- (a) Development of agency cash management regulations and procedural requirements within six months after release by Treasury of the fiscal requirements. Such agency regulations and requirements shall be subject to review and approval by the Commissioner, Bureau of Government Financial Operations, or his designee and, along with copies of the agency's internal audit reports relating to the subject of cash management, shall be presented to the Commissioner or his designee upon request.
- (b) Establishment of a method for monitoring the agency's cash management practices not later than three months after the completion of the agency's written regulations and procedures to ensure compliance with the requirements.
- (c) Periodic, but no less frequent than annual, review of the agency's cash management practices. The documentation covering such review shall be furnished to the Commissioner, Bureau of Government Financial Operations, or his designee.

11. Implementing Instructions. Detailed fiscal requirements for implementing these regulations will be released by the Commissioner, Bureau of Government Financial Operations, in Volume I of the Treasury Fiscal Requirements Manual for Guidance of Departments and Agencies.

Dated: December 29, 1976

/s/David Mosso
Fiscal Assistant Secretary

BIBLIOGRAPHY

1. Anderson, Paul F., and Harmon, R. D. Boyd, "The Management of Excess Corporate Cash," Financial Executive, October 1977.
2. Assistant Secretary of the Navy (Financial Management) Memorandum NAFC-73/7100/1 For Assistant Secretary of Defense (Comptroller), Subject: Cash Management, 16 November 1978.
3. Assistant Secretary of the Navy (Financial Management) Memorandum NDFL-73/71001 for Assistant Secretary of Defense (Comptroller), Subject: Cash Management, 1 March 1979.
4. Bierman, Harold, Jr., and McAdams, Alan K., Management Decisions for Cash and Marketable Securities, Cornell Studies in Policy and Administration, 1962.
5. Calman, Robert F., Linear Programming and Cash Management/Cash Alpha, MIT Press, 1968.
6. Commander in Chief, U.S. Atlantic Fleet Unclassified Letter FF1/N4111 Serial 1507 to Commander, Navy Accounting and Finance Center, Subject: Cash Held By Afloat Disbursing Officers, 7 March 1979.
7. Commander in Chief, U.S. Pacific Fleet Unclassified Letter FF1-1 7300 Serial 03C/1562 To Comptroller of the Navy, Subject: Cash Management, 3 March 1979.
8. Commander, Navy Accounting and Finance Center, Unclassified Letter NAFC-73/7100 to Commander in Chief, U.S. Atlantic Fleet, Commander in Chief, U.S. Pacific Fleet, Subject: Cash Held by Afloat Disbursing Offices, 22 January 1979.
9. Comptroller of the Navy Notice 7000, NAFC-73, NCF 51-78 to all Ships and Stations, Subject: Cash Management, 6 December 1978.
10. Comptroller General of the United States Report FGMSD-78-16, The Federal Government's Bill Payment Performance is Good But Should Be Better, 24 February 1978.
11. The Conference Board, Managing Company Cash, New York: The Conference Board, Inc., 1961.
12. General Accounting Office Report FGMSD-78-20, Cash Management Policy and Procedures Need Improvement, 17 March 1978.

13. Hadley, G., and Whitin, T. M., Analysis of Inventory Systems, Englewood Cliffs, NJ, 1963.
14. Hansen, Alvin H., A Guide to Keynes, New York: McGraw-Hill Book Co., Inc., 1953.
15. Hill, Jr., Roger W., Cash Management Techniques, American Management Association, Inc., 1970.
16. Homonoff, Richard, and Mullins, David Wiley, Jr., Cash Management, D. C. Heath and Company, 1975.
17. Interview with Mr. Terry Carnahan and Mr. Stephen Saks, General Accounting Office, Washington, DC, 28 March 1979.
18. Interview with Mr. Gary Terrill, Navy Accounting and Finance Center, Washington, DC, 28 March 1979.
19. Joint Financial Management Improvement Program, Proceedings from Cash Management Workshop, 18 October 1978.
20. Keynes, J. M., The General Theory of Employment, Interest and Money, New York, Harcourt-Brace and Co., 1936.
21. Morley, James E., Jr., "Cash Management - Working for the Extra 1% or 2%," Management Accounting, October 1978.
22. Naval Education and Training Command, Financial Management in The Navy, NAVEDTRA 10792-D, 1974.
23. Office of the Assistant Secretary of Defense (Comptroller), Report on Cash Management Review in the Department of Defense, August 1978.
24. Office of the Comptroller, Department of the Navy, Navy Comptroller Manual, Volume 4, Disbursing, NAVSO P-1000.
25. Orr, Daniel, Cash Management and the Demand for Money, New York: Praeger Publishers, 1970.
26. Prather, Charles L., Money and Banking, Ninth Edition, Homewood, Ill: Ricahrd D. Irwin, Inc., 1969.
27. President's Reorganization Project, Study Design, Strengthening Federal Cash Management, March 1978.
28. Reed, Ward L., Jr., "Cash - The Hidden Asset," Financial Executive, November 1970.
29. Searby, Frederick Wright, "Use Your Hidden Cash Resources," Harvard Business Review, March-April 1968.

30. Slater, S. D., The Strategy of Cash, New York: John Wiley & Sons, 1977.
31. Terrill, Gary, "Cash Management in Operation in the Navy," Financial Management Newsletter, Vol. III, No. III, December 1978.
32. Terrill, Gary, "Cash Management in Operation in the Navy," The Navy Supply Corps Newsletter, Vol. 41, No. 12, December 1978.

INITIAL DISTRIBUTION LIST

	No. Copies
1. Defense Documentation Center Cameron Station Alexandria, Virginia 22314	2
2. Library, Code 0142 Naval Postgraduate School Monterey, California 93940	2
3. Library, Code 54 Naval Postgraduate School Monterey, California 93940	2
4. Department Chairman, Code 54 Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
5. Professor Leslie Darbyshire, Code 54Da Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
6. Commander Edwin A. Fincke, USN, Code 54Fi Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
7. Defense Logistics Studies Information Exchange U.S. Army Logistics Management Center Fort Lee, Virginia 23801	1
8. Mr. Gary Terrill, Code NAFC-73 Navy Accounting and Finance Center Washington, DC 20376	1
9. Mr. Terry Carnahan U.S. General Accounting Office Room 56284 Pentagon Washington, DC 20301	1
10. LT Henry J. Sanford, USN 442 North Armistead St. T-3 Alexandria, Virginia 22312	2

Thesis 182710

S164 Sanford

c.1

Current cash manage-
ment efforts within the
federal government, De-
partment of Defense, and
the Navy: overview and
applications.

7 NOV 81 27000

7 NOV 81 27000

7 NOV 81 27000

27 OCT 83 28722

27 OCT 83 28722

132710

Thesis

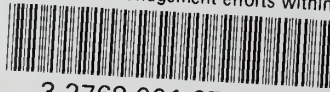
S164 Sanford

c.1

Current cash manage-
ment efforts within the
federal government, De-
partment of Defense, and
the Navy: overview and
applications.

thesS164

Current cash management efforts within t



3 2768 001 97736 6
DUDLEY KNOX LIBRARY